

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:23:18

INPUT SET: S7086.raw

SEQUENCE LISTING

(1) General Information:

(i) APPLICANT: Goodman, Corey S.
Kolodkin, Alex L.
matthes, David
Bentley, David R.
O'Connor, Timothy

(ii) TITLE OF INVENTION: The Semaphorin Gene Family

(iii) NUMBER OF SEQUENCES - 50

(iv) CORRESPONDENCE ADDRESS:

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(C) CITY: San Francisco
(D) STATE: CA
(E) COUNTRY: USA
(F) ZIP: 94111-4187

(v) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk
- (B) COMPUTER: IBM PC compatible
- (C) OPERATING SYSTEM: PC-DOS/MS-DOS
- (D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/121,713
(B) FILING DATE: 13-SEP-1993

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Osman, Richard A.
(B) REGISTRATION NUMBER: 36,627
(C) REFERENCE/DOCKET NUMBER: A-58750/RAO

(ix) TELECOMMUNICATION INFORMATION:

- (A) TELEPHONE: (415) 781-1989
- (B) TELEFAX: (415) 398-3249
- (C) TELEX: 910 277299 FHT UR

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

NOTE TO APPLICANT:

For all of your nucleic sequences, the nucleic number at the end of each line "wrapped" down to the next line. This occurred if your file was used in a word processor after creating it in PatentIn. Your word processor probably has different margin settings than those used in PatentIn. A right margin set at least to .3 will prevent wrapping.

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52 (ii) MOLECULE TYPE: peptide
53
54
55 (ix) FEATURE:
56 (A) NAME/KEY: Peptide
57 (B) LOCATION: 1..6
58 (D) OTHER INFORMATION: /label= SEQ01
59 /note= "Xaa denotes D or E at residue #1; Q,K,R,A
60 or N at residue #3; and Y,F or V at residue #5"
61
62
63
64 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:
65
66 Xaa Cys Xaa Asn Xaa Ile
67 1 5
68
69 (2) INFORMATION FOR SEQ ID NO:2:
70
71 (i) SEQUENCE CHARACTERISTICS:
72 (A) LENGTH: 6 amino acids
73 (B) TYPE: amino acid
74 (C) STRANDEDNESS: single
75 (D) TOPOLOGY: linear
76
77 (ii) MOLECULE TYPE: peptide
78
79
80 (ix) FEATURE:
81 (A) NAME/KEY: Peptide
82 (B) LOCATION: 1..6
83 (D) OTHER INFORMATION: /label= SEQ02
84 /note= "Xaa denotes Q,K,R,A or N at residue #2;
85 Y,F or V at residue #4; and R,K,Q or T at residue
86 #6"
87
88
89 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:
90
91 Cys Xaa Asn Xaa Ile Xaa
92 1 5
93
94 (2) INFORMATION FOR SEQ ID NO:3:
95
96 (i) SEQUENCE CHARACTERISTICS:
97 (A) LENGTH: 7 amino acids
98 (B) TYPE: amino acid
99 (C) STRANDEDNESS: single
100 (D) TOPOLOGY: linear
101
102 (ii) MOLECULE TYPE: peptide

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103
104
105 (ix) FEATURE:
106 (A) NAME/KEY: Peptide
107 (B) LOCATION: 1..7
108 (D) OTHER INFORMATION: /label= SEQ03
109 /note= "Xaa denotes N or G at residue #4; A,S or N
110 at residue #5; Y,F,H or G at residue #6; and
111 K,R,H,N or Q at residue #7"
112
113
114 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:
115
116 Cys Gly Thr Xaa Xaa Xaa Xaa
117 1 5
118
119 (2) INFORMATION FOR SEQ ID NO:4:
120
121 (i) SEQUENCE CHARACTERISTICS:
122 (A) LENGTH: 8 amino acids
123 (B) TYPE: amino acid
124 (C) STRANDEDNESS: single
125 (D) TOPOLOGY: linear
126
127 (ii) MOLECULE TYPE: peptide
128
129
130 (ix) FEATURE:
131 (A) NAME/KEY: Peptide
132 (B) LOCATION: 1..8
133 (D) OTHER INFORMATION: /label= SEQ04
134 /note= "Xaa denotes N or G at residue #4; and A,S
135 or N at residue #5"
136
137
138 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:
139
140 Cys Gly Thr Xaa Xaa Xaa Xaa Pro
141 1 5
142
143 (2) INFORMATION FOR SEQ ID NO:5:
144
145 (i) SEQUENCE CHARACTERISTICS:
146 (A) LENGTH: 10 amino acids
147 (B) TYPE: amino acid
148 (C) STRANDEDNESS: single
149 (D) TOPOLOGY: linear
150
151 (ii) MOLECULE TYPE: peptide
152
153

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154 (ix) FEATURE:
155 (A) NAME/KEY: Peptide
156 (B) LOCATION: 1..10
157 (D) OTHER INFORMATION: /label= SEQ05
158 /note= "Xaa denotes N or G at residue #4; and C or
159 D at residue #10"
160
161
162 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:
163
164 Cys Gly Thr Xaa Xaa Xaa Xaa Pro Xaa Xaa
165 1 5 10
166
167 (2) INFORMATION FOR SEQ ID NO:6:
168
169 (i) SEQUENCE CHARACTERISTICS:
170 (A) LENGTH: 13 amino acids
171 (B) TYPE: amino acid
172 (C) STRANDEDNESS: single
173 (D) TOPOLOGY: linear
174
175 (ii) MOLECULE TYPE: peptide
176
177
178 (ix) FEATURE:
179 (A) NAME/KEY: Peptide
180 (B) LOCATION: 1..13
181 (D) OTHER INFORMATION: /label= SEQ06
182 /note= "Xaa denotes C or D at residue #10; and Y
183 or I at residue #13"
184
185
186 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:
187
188 Cys Gly Thr Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa
189 1 5 10
190
191 (2) INFORMATION FOR SEQ ID NO:7:
192
193 (i) SEQUENCE CHARACTERISTICS:
194 (A) LENGTH: 7 amino acids
195 (B) TYPE: amino acid
196 (C) STRANDEDNESS: single
197 (D) TOPOLOGY: linear
198
199 (ii) MOLECULE TYPE: peptide
200
201
202 (ix) FEATURE:
203 (A) NAME/KEY: Peptide
204 (B) LOCATION: 1..7

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205 (D) OTHER INFORMATION: /label= SEQ07
206 /note= "Xaa denotes R,I,Q or V at residue #1; G or
207 A at residue #2; L,V or K at residue #3; C or S at
208 residue #4; F or Y at residue #6; and D or N at
209 residue #7"
210
211
212 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:
213
214 Xaa Xaa Xaa Xaa Pro Xaa Xaa
215 1 5
216
217 (2) INFORMATION FOR SEQ ID NO:8:
218
219 (i) SEQUENCE CHARACTERISTICS:
220 (A) LENGTH: 7 amino acids
221 (B) TYPE: amino acid
222 (C) STRANDEDNESS: single
223 (D) TOPOLOGY: linear
224
225 (ii) MOLECULE TYPE: peptide
226
227
228 (ix) FEATURE:
229 (A) NAME/KEY: Peptide
230 (B) LOCATION: 1..7
231 (D) OTHER INFORMATION: /label= SEQ08
232 /note= "Xaa denotes C or S at residue #1; F or Y
233 at residue #3; D or N at residue #4; D,E,R or K at
234 residue #6; and H,L or D at residue #7"
235
236
237 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:
238
239 Xaa Pro Xaa Xaa Pro Xaa Xaa
240 1 5
241
242 (2) INFORMATION FOR SEQ ID NO:9:
243
244 (i) SEQUENCE CHARACTERISTICS:
245 (A) LENGTH: 9 amino acids
246 (B) TYPE: amino acid
247 (C) STRANDEDNESS: single
248 (D) TOPOLOGY: linear
249
250 (ii) MOLECULE TYPE: peptide
251
252
253 (ix) FEATURE:
254 (A) NAME/KEY: Peptide
255 (B) LOCATION: 1..9

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256 (D) OTHER INFORMATION: /label= SEQ09
257 /note= "Xaa denotes G or A at residue #3; C or S
258 at residue #5; and D or N at residue #8"
259
260
261 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:
262
263 Gly Xaa Xaa Xaa Xaa Pro Tyr Xaa Pro
264 1 5
265
266 (2) INFORMATION FOR SEQ ID NO:10:
267
268 (i) SEQUENCE CHARACTERISTICS:
269 (A) LENGTH: 7 amino acids
270 (B) TYPE: amino acid
271 (C) STRANDEDNESS: single
272 (D) TOPOLOGY: linear
273
274 (ii) MOLECULE TYPE: peptide
275
276
277 (ix) FEATURE:
278 (A) NAME/KEY: Peptide
279 (B) LOCATION: 1..7
280 (D) OTHER INFORMATION: /label= SEQ10
281 /note= "Xaa denotes F or Y at residue #2; G or A
282 at residue #4; and V,N or A at residue #6"
283
284
285 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
286
287 Leu Xaa Ser Xaa Thr Xaa Ala
288 1 5
289
290 (2) INFORMATION FOR SEQ ID NO:11:
291
292 (i) SEQUENCE CHARACTERISTICS:
293 (A) LENGTH: 9 amino acids
294 (B) TYPE: amino acid
295 (C) STRANDEDNESS: single
296 (D) TOPOLOGY: linear
297
298 (ii) MOLECULE TYPE: peptide
299
300
301 (ix) FEATURE:
302 (A) NAME/KEY: Peptide
303 (B) LOCATION: 1..9
304 (D) OTHER INFORMATION: /label= SEQ11
305 /note= "Xaa denotes F or Y at residue #2; D or E
306 at residue #8; and F or Y at residue #9"

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307
308
309 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:
310
311 Leu Xaa Ser Xaa Thr Xaa Ala Xaa Xaa
312 1 5
313
314 (2) INFORMATION FOR SEQ ID NO:12:
315
316 (i) SEQUENCE CHARACTERISTICS:
317 (A) LENGTH: 8 amino acids
318 (B) TYPE: amino acid
319 (C) STRANDEDNESS: single
320 (D) TOPOLOGY: linear
321
322 (ii) MOLECULE TYPE: peptide
323
324
325 (ix) FEATURE:
326 (A) NAME/KEY: Peptide
327 (B) LOCATION: 1..8
328 (D) OTHER INFORMATION: /label= SEQ12
329 /note= "Xaa denotes F or Y at residue #1; G or A
330 at residue #3; V,N or A at residue #5; D or E at
331 residue #7; and F or Y at residue #8"
332
333
334 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:
335
336 Xaa Ser Xaa Thr Xaa Ala Xaa Xaa
337 1 5
338
339 (2) INFORMATION FOR SEQ ID NO:13:
340
341 (i) SEQUENCE CHARACTERISTICS:
342 (A) LENGTH: 7 amino acids
343 (B) TYPE: amino acid
344 (C) STRANDEDNESS: single
345 (D) TOPOLOGY: linear
346
347 (ii) MOLECULE TYPE: peptide
348
349
350 (ix) FEATURE:
351 (A) NAME/KEY: Peptide
352 (B) LOCATION: 1..7
353 (D) OTHER INFORMATION: /label= SEQ13
354 /note= "Xaa denotes N or D at residue #2; and A or
355 K at residue #3"
356
357

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358 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:
359
360 Leu Xaa Xaa Pro Asn Phe Val
361 1 5
362
363 (2) INFORMATION FOR SEQ ID NO:14:
364
365 (i) SEQUENCE CHARACTERISTICS:
366 (A) LENGTH: 5 amino acids
367 (B) TYPE: amino acid
368 (C) STRANDEDNESS: single
369 (D) TOPOLOGY: linear
370
371 (ii) MOLECULE TYPE: peptide
372
373
374
375 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:
376
377 Phe Phe Phe Arg Glu
378 1 5
379
380 (2) INFORMATION FOR SEQ ID NO:15:
381
382 (i) SEQUENCE CHARACTERISTICS:
383 (A) LENGTH: 6 amino acids
384 (B) TYPE: amino acid
385 (C) STRANDEDNESS: single
386 (D) TOPOLOGY: linear
387
388 (ii) MOLECULE TYPE: peptide
389
390
391 (ix) FEATURE:
392 (A) NAME/KEY: Peptide
393 (B) LOCATION: 1..6
394 (D) OTHER INFORMATION: /label= SEQ15
395 /note= "Xaa denotes F or Y at residue #3; and T or
396 N at residue #6"
397
398
399 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:
400
401 Phe Phe Xaa Arg Glu Xaa
402 1 5
403
404 (2) INFORMATION FOR SEQ ID NO:16:
405
406 (i) SEQUENCE CHARACTERISTICS:
407 (A) LENGTH: 6 amino acids
408 (B) TYPE: amino acid

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409 (C) STRANDEDNESS: single
410 (D) TOPOLOGY: linear
411
412 (ii) MOLECULE TYPE: peptide
413
414
415 (ix) FEATURE:
416 (A) NAME/KEY: Peptide
417 (B) LOCATION: 1..6
418 (D) OTHER INFORMATION: /label= SEQ16
419 /note= "Xaa denotes T or N at residue #5"
420
421
422 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:
423
424 Phe Phe Arg Glu Xaa Ala
425 1 5
426
427 (2) INFORMATION FOR SEQ ID NO:17:
428
429 (i) SEQUENCE CHARACTERISTICS:
430 (A) LENGTH: 6 amino acids
431 (B) TYPE: amino acid
432 (C) STRANDEDNESS: single
433 (D) TOPOLOGY: linear
434
435 (ii) MOLECULE TYPE: peptide
436
437
438 (ix) FEATURE:
439 (A) NAME/KEY: Peptide
440 (B) LOCATION: 1..6
441 (D) OTHER INFORMATION: /label= SEQ17
442 /note= "Xaa denotes F or Y at residue #2; and T or
443 N at residue #5"
444
445
446 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:
447
448 Phe Xaa Arg Glu Xaa Ala
449 1 5
450
451 (2) INFORMATION FOR SEQ ID NO:18:
452
453 (i) SEQUENCE CHARACTERISTICS:
454 (A) LENGTH: 6 amino acids
455 (B) TYPE: amino acid
456 (C) STRANDEDNESS: single
457 (D) TOPOLOGY: linear
458
459 (ii) MOLECULE TYPE: peptide

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460
461
462 (ix) FEATURE:
463 (A) NAME/KEY: Peptide
464 (B) LOCATION: 1..6
465 (D) OTHER INFORMATION: /label= SEQ18
466 /note= "Xaa denotes F or Y at residue #4"
467
468
469 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:
470
471 Tyr Phe Phe Xaa Arg Glu
472 1 5
473
474 (2) INFORMATION FOR SEQ ID NO:19:
475
476 (i) SEQUENCE CHARACTERISTICS:
477 (A) LENGTH: 6 amino acids
478 (B) TYPE: amino acid
479 (C) STRANDEDNESS: single
480 (D) TOPOLOGY: linear
481
482 (ii) MOLECULE TYPE: peptide
483
484
485 (ix) FEATURE:
486 (A) NAME/KEY: Peptide
487 (B) LOCATION: 1..6
488 (D) OTHER INFORMATION: /label= SEQ19
489 /note= "Xaa denotes F or Y at residue #1; and F or
490 Y at residue #4"
491
492
493 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:
494
495 Xaa Phe Phe Xaa Arg Glu
496 1 5
497
498 (2) INFORMATION FOR SEQ ID NO:20:
499
500 (i) SEQUENCE CHARACTERISTICS:
501 (A) LENGTH: 7 amino acids
502 (B) TYPE: amino acid
503 (C) STRANDEDNESS: single
504 (D) TOPOLOGY: linear
505
506 (ii) MOLECULE TYPE: peptide
507
508
509 (ix) FEATURE:
510 (A) NAME/KEY: Peptide

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511 (B) LOCATION: 1..7
512 (D) OTHER INFORMATION: /label= SEQ20
513 /note= "Xaa denotes F or Y at residue #1; F or Y
514 at residue #2; F or Y at residue #3; and T or N at
515 residue #6"
516
517
518 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:
519
520 Xaa Xaa Xaa Arg Glu Xaa Ala
521 1 5
522
523 (2) INFORMATION FOR SEQ ID NO:21:
524
525 (i) SEQUENCE CHARACTERISTICS:
526 (A) LENGTH: 7 amino acids
527 (B) TYPE: amino acid
528 (C) STRANDEDNESS: single
529 (D) TOPOLOGY: linear
530
531 (ii) MOLECULE TYPE: peptide
532
533
534 (ix) FEATURE:
535 (A) NAME/KEY: Peptide
536 (B) LOCATION: 1..7
537 (D) OTHER INFORMATION: /label= SEQ21
538 /note= "Xaa denotes I or V at residue #1; F or Y
539 at residue #2; F or Y at residue #4; and F or Y at
540 residue #5"
541
542
543 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:
544
545 Xaa Xaa Phe Xaa Xaa Arg Glu
546 1 5
547
548 (2) INFORMATION FOR SEQ ID NO:22:
549
550 (i) SEQUENCE CHARACTERISTICS:
551 (A) LENGTH: 7 amino acids
552 (B) TYPE: amino acid
553 (C) STRANDEDNESS: single
554 (D) TOPOLOGY: linear
555
556 (ii) MOLECULE TYPE: peptide
557
558
559 (ix) FEATURE:
560 (A) NAME/KEY: Peptide
561 (B) LOCATION: 1..7

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562 (D) OTHER INFORMATION: /label= SEQ22
563 /note= "Xaa denotes K,F or Y at residue #2; F or Y
564 at residue #4; F,Y,I or L at residue #5; F,Y,I or
565 L at residue #6; and F or Y at residue #7"
566
567
568 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:
569
570 Asp Xaa Val Xaa Xaa Xaa Xaa
571 1 5
572
573 (2) INFORMATION FOR SEQ ID NO:23:
574
575 (i) SEQUENCE CHARACTERISTICS:
576 (A) LENGTH: 8 amino acids
577 (B) TYPE: amino acid
578 (C) STRANDEDNESS: single
579 (D) TOPOLOGY: linear
580
581 (ii) MOLECULE TYPE: peptide
582
583
584 (ix) FEATURE:
585 (A) NAME/KEY: Peptide
586 (B) LOCATION: 1..8
587 (D) OTHER INFORMATION: /label= SEQ23
588 /note= "Xaa denotes V or I at residue #1; F or Y
589 at residue #2; F,Y,I or L at residue #3; F,Y,I or
590 L at residue #4; R or T at residue #6; and T or N
591 at residue #8"
592
593
594 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:
595
596 Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa
597 1 5
598
599 (2) INFORMATION FOR SEQ ID NO:24:
600
601 (i) SEQUENCE CHARACTERISTICS:
602 (A) LENGTH: 8 amino acids
603 (B) TYPE: amino acid
604 (C) STRANDEDNESS: single
605 (D) TOPOLOGY: linear
606
607 (iii) MOLECULE TYPE: peptide
608
609
610 (ix) FEATURE:
611 (A) NAME/KEY: Peptide
612 (B) LOCATION: 1..8

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613 (D) OTHER INFORMATION: /label= SEQ24
614 /note= "Xaa denotes V or I at residue #1; F or Y
615 at residue #2; F,Y,I or L at residue #3; F,Y,I or
616 L at residue #4; F or Y at residue #5; R or T at
617 residue #6; E,D or V at residue #7; and T or N at
618 residue #8"
619
620
621 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:
622
623 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
624 1 5
625
626 (2) INFORMATION FOR SEQ ID NO:25:
627
628 (i) SEQUENCE CHARACTERISTICS:
629 (A) LENGTH: 7 amino acids
630 (B) TYPE: amino acid
631 (C) STRANDEDNESS: single
632 (D) TOPOLOGY: linear
633
634 (ii) MOLECULE TYPE: peptide
635
636
637 (ix) FEATURE:
638 (A) NAME/KEY: Peptide
639 (B) LOCATION: 1..7
640 (D) OTHER INFORMATION: /label= SEQ25
641 /note= "Xaa denotes F or Y at residue #2; and C or
642 S at residue #5"
643
644
645 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:
646
647 Glu Xaa Ile Asn Xaa Gly Lys
648 1 5
649
650 (2) INFORMATION FOR SEQ ID NO:26:
651
652 (i) SEQUENCE CHARACTERISTICS:
653 (A) LENGTH: 7 amino acids
654 (B) TYPE: amino acid
655 (C) STRANDEDNESS: single
656 (D) TOPOLOGY: linear
657
658 (ii) MOLECULE TYPE: peptide
659
660
661 (ix) FEATURE:
662 (A) NAME/KEY: Peptide
663 (B) LOCATION: 1..7

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664 (D) OTHER INFORMATION: /label= SEQ26
665 /note= "Xaa denotes F or Y at residue #1; and A,V
666 or I at residue #7"
667
668
669 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:
670
671 Xaa Ile Asn Cys Gly Lys Xaa
672 1 5
673
674 (2) INFORMATION FOR SEQ ID NO:27:
675
676 (i) SEQUENCE CHARACTERISTICS:
677 (A) LENGTH: 7 amino acids
678 (B) TYPE: amino acid
679 (C) STRANDEDNESS: single
680 (D) TOPOLOGY: linear
681
682 (ii) MOLECULE TYPE: peptide
683
684
685 (ix) FEATURE:
686 (A) NAME/KEY: Peptide
687 (B) LOCATION: 1..7
688 (D) OTHER INFORMATION: /label= SEQ27
689 /note= "Xaa denotes V or I at residue #2; A or G
690 at residue #3; R or Q at residue #4; and V or I at
691 residue #5"
692
693
694 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:
695
696 Arg Xaa Xaa Xaa Xaa Cys Lys
697 1 5
698
699 (2) INFORMATION FOR SEQ ID NO:28:
700
701 (i) SEQUENCE CHARACTERISTICS:
702 (A) LENGTH: 9 amino acids
703 (B) TYPE: amino acid
704 (C) STRANDEDNESS: single
705 (D) TOPOLOGY: linear
706
707 (ii) MOLECULE TYPE: peptide
708
709
710 (ix) FEATURE:
711 (A) NAME/KEY: Peptide
712 (B) LOCATION: 1..9
713 (D) OTHER INFORMATION: /label= SEQ28
714 /note= "Xaa denotes V or I at residue #2; R or Q

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766
767 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:
768
769 Xaa Trp Xaa Xaa Xaa Leu Xaa
770 1 5
771
772 (2) INFORMATION FOR SEQ ID NO:31:
773
774 (i) SEQUENCE CHARACTERISTICS:
775 (A) LENGTH: 8 amino acids
776 (B) TYPE: amino acid
777 (C) STRANDEDNESS: single
778 (D) TOPOLOGY: linear
779
780 (ii) MOLECULE TYPE: peptide
781
782
783 (ix) FEATURE:
784 (A) NAME/KEY: Peptide
785 (B) LOCATION: 1..8
786 (D) OTHER INFORMATION: /label= SEQ31
787 /note= "Xaa denotes F or Y at residue #1; K or R
788 at residue #3; A or S at residue #4; and N or I at
789 residue #7"
790
791
792 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:
793
794 Xaa Leu Xaa Xaa Arg Leu Xaa Cys
795 1 5
796
797 (2) INFORMATION FOR SEQ ID NO:32:
798
799 (i) SEQUENCE CHARACTERISTICS:
800 (A) LENGTH: 6 amino acids
801 (B) TYPE: amino acid
802 (C) STRANDEDNESS: single
803 (D) TOPOLOGY: linear
804
805 (ii) MOLECULE TYPE: peptide
806
807
808 (ix) FEATURE:
809 (A) NAME/KEY: Peptide
810 (B) LOCATION: 1..6
811 (D) OTHER INFORMATION: /label= SEQ32
812 /note= "Xaa denotes N or I at residue #1; I or V
813 at residue #4; and P or S at residue #5"
814
815
816 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

**RAW SEQUENCE LISTING
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TIME: 19:25:00**INPUT SET: S7086.raw**

817
818 Xaa Cys Ser Xaa Xaa Gly
819 1 5
820
821 (2) INFORMATION FOR SEQ ID NO:33:
822
823 (i) SEQUENCE CHARACTERISTICS:
824 (A) LENGTH: 9 amino acids
825 (B) TYPE: amino acid
826 (C) STRANDEDNESS: single
827 (D) TOPOLOGY: linear
828
829 (ii) MOLECULE TYPE: peptide
830
831
832 (ix) FEATURE:
833 (A) NAME/KEY: Peptide
834 (B) LOCATION: 1..9
835 (D) OTHER INFORMATION: /label= SEQ33
836 /note= "Xaa denotes T,A or S at residue #2; T,A or
837 S at residue #3; F,Y or L at residue #4; and
838 A,S,V,I or L at residue #7"
839
840
841 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:
842
843 Trp Xaa Xaa Xaa Leu Lys Xaa Xaa Leu
844 1 5
845
846 (2) INFORMATION FOR SEQ ID NO:34:
847
848 (i) SEQUENCE CHARACTERISTICS:
849 (A) LENGTH: 11 amino acids
850 (B) TYPE: amino acid
851 (C) STRANDEDNESS: single
852 (D) TOPOLOGY: linear
853
854 (ii) MOLECULE TYPE: peptide
855
856
857 (ix) FEATURE:
858 (A) NAME/KEY: Peptide
859 (B) LOCATION: 1..11
860 (D) OTHER INFORMATION: /label= SEQ34
861 /note= "Xaa denotes T,A or S at residue #2; and
862 T,A or S at residue #3"
863
864
865 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:
866
867 Trp Xaa Xaa Xaa Leu Lys Xaa Xaa Leu Xaa Cys

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
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868 1 5 10
869
870 (2) INFORMATION FOR SEQ ID NO:35:
871
872 (i) SEQUENCE CHARACTERISTICS:
873 (A) LENGTH: 11 amino acids
874 (B) TYPE: amino acid
875 (C) STRANDEDNESS: single
876 (D) TOPOLOGY: linear
877
878 (ii) MOLECULE TYPE: peptide
879
880
881 (ix) FEATURE:
882 (A) NAME/KEY: Peptide
883 (B) LOCATION: 1..11
884 (D) OTHER INFORMATION: /label= SEQ35
885 /note= "Xaa denotes T or S at residue #3"
886
887
888 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:
889
890 Trp Xaa Xaa Xaa Leu Lys Xaa Xaa Leu Xaa Cys
891 1 5 10
892
893 (2) INFORMATION FOR SEQ ID NO:36:
894
895 (i) SEQUENCE CHARACTERISTICS:
896 (A) LENGTH: 7 amino acids
897 (B) TYPE: amino acid
898 (C) STRANDEDNESS: single
899 (D) TOPOLOGY: linear
900
901 (ii) MOLECULE TYPE: peptide
902
903
904 (ix) FEATURE:
905 (A) NAME/KEY: Peptide
906 (B) LOCATION: 1..7
907 (D) OTHER INFORMATION: /label= SEQ36
908 /note= "Xaa denotes F or Y at residue #1; F or Y
909 at residue #2; and N or D at residue #3"
910
911
912 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:
913
914 Xaa Xaa Xaa Glu Ile Gln Ser
915 1 5
916
917 (2) INFORMATION FOR SEQ ID NO:37:
918

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
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919 (i) SEQUENCE CHARACTERISTICS:
920 (A) LENGTH: 7 amino acids
921 (B) TYPE: amino acid
922 (C) STRANDEDNESS: single
923 (D) TOPOLOGY: linear
924
925 (ii) MOLECULE TYPE: peptide
926
927
928 (ix) FEATURE:
929 (A) NAME/KEY: Peptide
930 (B) LOCATION: 1..7
931 (D) OTHER INFORMATION: /label= SEQ37
932 /note= "Xaa denotes F or Y at residue #1; F or Y
933 at residue #3; F or Y at residue #4; F or Y at
934 residue #5; and N or D at residue #6"
935
936
937 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:
938
939 Xaa Pro Xaa Xaa Xaa Xaa Glu
940 1 5
941
942 (2) INFORMATION FOR SEQ ID NO:38:
943
944 (i) SEQUENCE CHARACTERISTICS:
945 (A) LENGTH: 7 amino acids
946 (B) TYPE: amino acid
947 (C) STRANDEDNESS: single
948 (D) TOPOLOGY: linear
949
950 (ii) MOLECULE TYPE: peptide
951
952
953 (ix) FEATURE:
954 (A) NAME/KEY: Peptide
955 (B) LOCATION: 1..7
956 (D) OTHER INFORMATION: /label= SEQ38
957 /note= "Xaa denotes V,I or L at residue #4; and F
958 or Y at residue #7"
959
960 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:
961
962 Gly Ser Ala Xaa Cys Xaa Xaa
963 1 5
964
965 (2) INFORMATION FOR SEQ ID NO:39:
966
967 (i) SEQUENCE CHARACTERISTICS:
968 (A) LENGTH: 8 amino acids
969 (B) TYPE: amino acid

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970 (C) STRANDEDNESS: single
971 (D) TOPOLOGY: linear
972
973 (ii) MOLECULE TYPE: peptide
974
975
976 (ix) FEATURE:
977 (A) NAME/KEY: Peptide
978 (B) LOCATION: 1..8
979 (D) OTHER INFORMATION: /label= SEQ39
980 /note= "Xaa denotes V,I or L at residue #3; and F
981 or Y at residue #6"
982
983
984 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:
985
986 Ser Ala Xaa Cys Xaa Xaa Xaa Met
987 1 5
988
989 (2) INFORMATION FOR SEQ ID NO:40:
990
991 (i) SEQUENCE CHARACTERISTICS:
992 (A) LENGTH: 7 amino acids
993 (B) TYPE: amino acid
994 (C) STRANDEDNESS: single
995 (D) TOPOLOGY: linear
996
997 (ii) MOLECULE TYPE: peptide
998
999
1000 (ix) FEATURE:
1001 (A) NAME/KEY: Peptide
1002 (B) LOCATION: 1..7
1003 (D) OTHER INFORMATION: /label= SEQ40
1004 /note= "Xaa denotes N or A at residue #3; and P or
1005 A at residue #6"
1006
1007
1008 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:
1009
1010 Asn Ser Xaa Trp Leu Xaa Val
1011 1 5
1012
1013 (2) INFORMATION FOR SEQ ID NO:41:
1014
1015 (i) SEQUENCE CHARACTERISTICS:
1016 (A) LENGTH: 7 amino acids
1017 (B) TYPE: amino acid
1018 (C) STRANDEDNESS: single
1019 (D) TOPOLOGY: linear
1020

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
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1021 (ii) MOLECULE TYPE: peptide
1022
1023
1024 (ix) FEATURE:
1025 (A) NAME/KEY: Peptide
1026 (B) LOCATION: 1..7
1027 (D) OTHER INFORMATION: /label= SEQ41
1028 /note= "Xaa denotes V,L or I at residue #1; and
1029 E,D,Y,S or F at residue #3"
1030
1031
1032 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:
1033
1034 Xaa Pro Xaa Pro Arg Pro Gly
1035 1 5
1036
1037 (2) INFORMATION FOR SEQ ID NO:42:
1038
1039 (i) SEQUENCE CHARACTERISTICS:
1040 (A) LENGTH: 9 amino acids
1041 (B) TYPE: amino acid
1042 (C) STRANDEDNESS: single
1043 (D) TOPOLOGY: linear
1044
1045 (ii) MOLECULE TYPE: peptide
1046
1047
1048 (ix) FEATURE:
1049 (A) NAME/KEY: Peptide
1050 (B) LOCATION: 1..9
1051 (D) OTHER INFORMATION: /label= SEQ42
1052 /note= "Xaa denotes V,L or I at residue #1; and R
1053 or A at residue #5"
1054
1055
1056 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:
1057
1058 Xaa Pro Xaa Pro Xaa Pro Gly Xaa Cys
1059 1 5
1060
1061 (2) INFORMATION FOR SEQ ID NO:43:
1062
1063 (i) SEQUENCE CHARACTERISTICS:
1064 (A) LENGTH: 8 amino acids
1065 (B) TYPE: amino acid
1066 (C) STRANDEDNESS: single
1067 (D) TOPOLOGY: linear
1068
1069 (ii) MOLECULE TYPE: peptide
1070
1071

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
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1072 (ix) FEATURE:
1073 (A) NAME/KEY: Peptide
1074 (B) LOCATION: 1..8
1075 (D) OTHER INFORMATION: /label= SEQ43
1076 /note= "Xaa denotes E,D,Y,S or F at residue #2;
1077 and T,Q or S at residue #7"
1078
1079
1080 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:
1081
1082 Pro Xaa Pro Arg Pro Gly Xaa Cys
1083 1 5
1084
1085 (2) INFORMATION FOR SEQ ID NO:44:
1086
1087 (i) SEQUENCE CHARACTERISTICS:
1088 (A) LENGTH: 6 amino acids
1089 (B) TYPE: amino acid
1090 (C) STRANDEDNESS: single
1091 (D) TOPOLOGY: linear
1092
1093 (ii) MOLECULE TYPE: peptide
1094
1095
1096 (ix) FEATURE:
1097 (A) NAME/KEY: Peptide
1098 (B) LOCATION: 1..6
1099 (D) OTHER INFORMATION: /label= SEQ44
1100 /note= "Xaa denotes H,F or Y at residue #3; and A
1101 or G at residue #5"
1102
1103
1104 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:
1105
1106 Asp Pro Xaa Cys Xaa Trp
1107 1 5
1108
1109 (2) INFORMATION FOR SEQ ID NO:45:
1110
1111 (i) SEQUENCE CHARACTERISTICS:
1112 (A) LENGTH: 6 amino acids
1113 (B) TYPE: amino acid
1114 (C) STRANDEDNESS: single
1115 (D) TOPOLOGY: linear
1116
1117 (ii) MOLECULE TYPE: peptide
1118
1119
1120 (ix) FEATURE:
1121 (A) NAME/KEY: Peptide
1122 (B) LOCATION: 1..6

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

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1123 (D) OTHER INFORMATION: /label= SEQ45
1124 /note= "Xaa denotes H,F or Y at residue #2; and A
1125 or G at residue #4"
1126
1127
1128 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:
1129
1130 Pro Xaa Cys Xaa Trp Asp
1131 1 5
1132
1133 (2) INFORMATION FOR SEQ ID NO:46:
1134
1135 (i) SEQUENCE CHARACTERISTICS:
1136 (A) LENGTH: 7 amino acids
1137 (B) TYPE: amino acid
1138 (C) STRANDEDNESS: single
1139 (D) TOPOLOGY: linear
1140
1141 (ii) MOLECULE TYPE: peptide
1142
1143
1144 (ix) FEATURE:
1145 (A) NAME/KEY: Peptide
1146 (B) LOCATION: 1..7
1147 (D) OTHER INFORMATION: /label= SEQ46
1148 /note= "Xaa denotes A or G at residue #5"
1149
1150
1151 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:
1152
1153 Asp Pro Xaa Cys Xaa Trp Asp
1154 1 5
1155
1156 (2) INFORMATION FOR SEQ ID NO:47:
1157
1158 (i) SEQUENCE CHARACTERISTICS:
1159 (A) LENGTH: 12 amino acids
1160 (B) TYPE: amino acid
1161 (C) STRANDEDNESS: single
1162 (D) TOPOLOGY: linear
1163
1164 (ii) MOLECULE TYPE: peptide
1165
1166
1167
1168 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:
1169
1170 Cys Xaa Xaa Xaa Xaa Asp Pro Xaa Cys Xaa Trp Asp
1171 1 5 10
1172
1173 (2) INFORMATION FOR SEQ ID NO:48:

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:25:44**INPUT SET: S7086.raw**

1174
1175 (i) SEQUENCE CHARACTERISTICS:
1176 (A) LENGTH: 11 amino acids
1177 (B) TYPE: amino acid
1178 (C) STRANDEDNESS: single
1179 (D) TOPOLOGY: linear
1180
1181 (ii) MOLECULE TYPE: peptide
1182
1183
1184
1185 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:
1186
1187 Cys Xaa Xaa Xaa Asp Pro Xaa Cys Xaa Trp Asp
1188 1 5 10
1189
1190 (2) INFORMATION FOR SEQ ID NO:49:
1191
1192 (i) SEQUENCE CHARACTERISTICS:
1193 (A) LENGTH: 10 amino acids
1194 (B) TYPE: amino acid
1195 (C) STRANDEDNESS: single
1196 (D) TOPOLOGY: linear
1197
1198 (ii) MOLECULE TYPE: peptide
1199
1200
1201
1202 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:
1203
1204 Cys Xaa Xaa Asp Pro Xaa Cys Xaa Trp Asp
1205 1 5 10
1206
1207 (2) INFORMATION FOR SEQ ID NO:50:
1208
1209 (i) SEQUENCE CHARACTERISTICS:
1210 (A) LENGTH: 15 amino acids
1211 (B) TYPE: amino acid
1212 (C) STRANDEDNESS: single
1213 (D) TOPOLOGY: linear
1214
1215 (ii) MOLECULE TYPE: peptide
1216
1217
1218
1219 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:
1220
1221 Cys Xaa Xaa Cys Xaa Xaa Xaa Asp Xaa Xaa Cys Xaa Trp Asp
1222 1 5 10 15
1223
1224 (2) INFORMATION FOR SEQ ID NO:51:

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:25:51**INPUT SET: S7086.raw**

1225
1226 (i) SEQUENCE CHARACTERISTICS:
1227 (A) LENGTH: 14 amino acids
1228 (B) TYPE: amino acid
1229 (C) STRANDEDNESS: single
1230 (D) TOPOLOGY: linear
1231
1232 (ii) MOLECULE TYPE: peptide
1233
1234
1235
1236 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:
1237
1238 Cys Xaa Xaa Cys Xaa Xaa Xaa Asp Xaa Xaa Cys Xaa Trp Asp
1239 1 5 10
1240
1241 (2) INFORMATION FOR SEQ ID NO:52:
1242
1243 (i) SEQUENCE CHARACTERISTICS:
1244 (A) LENGTH: 13 amino acids
1245 (B) TYPE: amino acid
1246 (C) STRANDEDNESS: single
1247 (D) TOPOLOGY: linear
1248
1249 (ii) MOLECULE TYPE: peptide
1250
1251
1252
1253 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:
1254
1255 Cys Xaa Xaa Cys Xaa Xaa Asp Xaa Xaa Cys Xaa Trp Asp
1256 1 5 10
1257
1258
1259 (2) INFORMATION FOR SEQ ID NO:53:
1260
1261 (i) SEQUENCE CHARACTERISTICS:
--> 1262 (A) LENGTH: 2601 base pairs
1263 (B) TYPE: nucleic acid
1264 (C) STRANDEDNESS: double
1265 (D) TOPOLOGY: linear
1266
1267 (ii) MOLECULE TYPE: cDNA
1268
1269
1270 (ix) FEATURE:
1271 (A) NAME/KEY: CDS
1272 (B) LOCATION: 16..2331
1273
1274
1275 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

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PATENT APPLICATION US/08/121,713DATE: 12/17/93
TIME: 19:25:57

INPUT SET: S7086.raw

1276
1277 GGAATTCCCT GCAGC ATG GGC TGG TTA ACT AGG ATT GTC TGT CTT TTC TGG
1278 51 Met Gly Trp Leu Thr Arg Ile Val Cys Leu Phe Trp
1279 1 5 10
1280
1281
1282 GGA GTA TTA CTT ACA GCA AGA GCA AAC TAT CAG AAT GGG AAG AAC AAT
1283 99 Gly Val Leu Leu Thr Ala Arg Ala Asn Tyr Gln Asn Gly Lys Asn Asn
1284 15 20 25
1285
1286
1287 GTG CCA AGG CTG AAA TTA TCC TAC AAA GAA ATG TTG GAA TCC AAC AAT
1288 147
1289 Val Pro Arg Leu Lys Leu Ser Tyr Lys Glu Met Leu Glu Ser Asn Asn
1290 30 35 40
1291
1292 GTG ATC ACT TTC AAT GGC TTG GCC AAC AGC TCC AGT TAT CAT ACC TTC
1293 195
1294 Val Ile Thr Phe Asn Gly Leu Ala Asn Ser Ser Tyr His Thr Phe
1295 45 50 55 60
1296
1297 CTT TTG GAT GAG GAA CGG AGT AGG CTG TAT GTT GGA GCA AAG GAT CAC
1298 243
1299 Leu Leu Asp Glu Glu Arg Ser Arg Leu Tyr Val Gly Ala Lys Asp His
1300 65 70 75
1301
1302 ATA TTT TCA TTC GAC CTG GTT AAT ATC AAG GAT TTT CAA AAG ATT GTG
1303 291
1304 Ile Phe Ser Phe Asp Leu Val Asn Ile Lys Asp Phe Gln Lys Ile Val
1305 80 85 90
1306
1307 TGG CCA GTA TCT TAC ACC AGA AGA GAT GAA TGC AAG TGG GCT GGA AAA
1308 339
1309 Trp Pro Val Ser Tyr Thr Arg Arg Asp Glu Cys Lys Trp Ala Gly Lys
1310 95 100 105
1311
1312 GAC ATC CTG AAA GAA TGT GCT AAT TTC ATC AAG GTA CTT AAG GCA TAT
1313 387
1314 Asp Ile Leu Lys Glu Cys Ala Asn Phe Ile Lys Val Leu Lys Ala Tyr
1315 110 115 120
1316
1317 AAT CAG ACT CAC TTG TAC GCC TGT GGA ACG GGG GCT TTT CAT CCA ATT
1318 435
1319 Asn Gln Thr His Leu Tyr Ala Cys Gly Thr Gly Ala Phe His Pro Ile
1320 125 130 135 140
1321
1322 TGC ACC TAC ATT GAA ATT GGA CAT CAT CCT GAG GAC AAT ATT TTT AAG
1323 483
1324 Cys Thr Tyr Ile Glu Ile Gly His His Pro Glu Asp Asn Ile Phe Lys
1325 145 150 155
1326

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:03**INPUT SET: S7086.raw**

1327 CTG GAG AAC TCA CAT TTT GAA AAC GGC CGT GGG AAG AGT CCA TAT GAC
1328 531
1329 Leu Glu Asn Ser His Phe Glu Asn Gly Arg Gly Lys Ser Pro Tyr Asp
1330 160 165 170
1331
1332 CCT AAG CTG CTG ACA GCA TCC CTT TTA ATA GAT GGA GAA TTA TAC TCT
1333 579
1334 Pro Lys Leu Leu Thr Ala Ser Leu Leu Ile Asp Gly Glu Leu Tyr Ser
1335 175 180 185
1336
1337 GGA ACT GCA GCT GAT TTT ATG GGG CGA GAC TTT GCT ATC TTC CGA ACT
1338 627
1339 Gly Thr Ala Ala Asp Phe Met Gly Arg Asp Phe Ala Ile Phe Arg Thr
1340 190 195 200
1341
1342 CTT GGG CAC CAC CAC CCA ATC AGG ACA GAG CAG CAT GAT TCC AGG TGG
1343 675
1344 Leu Gly His His His Pro Ile Arg Thr Glu Gln His Asp Ser Arg Trp
1345 205 210 215 220
1346
1347 CTC AAT GAT CCA AAG TTC ATT AGT GCC CAC CTC ATC TCA GAG AGT GAC
1348 723
1349 Leu Asn Asp Pro Lys Phe Ile Ser Ala His Leu Ile Ser Glu Ser Asp
1350 225 230 235
1351
1352 AAT CCT GAA GAT GAC AAA GTA TAC TTT TTC TTC CGT GAA AAT GCA ATA
1353 771
1354 Asn Pro Glu Asp Asp Lys Val Tyr Phe Phe Arg Glu Asn Ala Ile
1355 240 245 250
1356
1357 GAT GGA GAA CAC TCT GGA AAA GCT ACT CAC GCT AGA ATA GGT CAG ATA
1358 819
1359 Asp Gly Glu His Ser Gly Lys Ala Thr His Ala Arg Ile Gly Gln Ile
1360 255 260 265
1361
1362 TGC AAG AAT GAC TTT GGA GGG CAC AGA AGT CTG GTG AAT AAA TGG ACA
1363 867
1364 Cys Lys Asn Asp Phe Gly Gly His Arg Ser Leu Val Asn Lys Trp Thr
1365 270 275 280
1366
1367 ACA TTC CTC AAA GCT CGT CTG ATT TGC TCA GTG CCA GGT CCA AAT GGC
1368 915
1369 Thr Phe Leu Lys Ala Arg Leu Ile Cys Ser Val Pro Gly Pro Asn Gly
1370 285 290 295 300
1371
1372 ATT GAC ACT CAT TTT GAT GAA CTG CAG GAT GTA TTC CTA ATG AAC TTT
1373 963
1374 Ile Asp Thr His Phe Asp Glu Leu Gln Asp Val Phe Leu Met Asn Phe
1375 305 310 315
1376
1377 AAA GAT CCT AAA AAT CCA GTT GTA TAT GGA GTG TTT ACG ACT TCC AGT

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:10**INPUT SET: S7086.raw**

1378 1011
1379 Lys Asp Pro Lys Asn Pro Val Val Tyr Gly Val Phe Thr Thr Ser Ser
1380 320 325 330
1381
1382 AAC ATT TTC AAG GGA TCA GCC GTG TGT ATG TAT AGC ATG AGT GAT GTG
1383 1059
1384 Asn Ile Phe Lys Gly Ser Ala Val Cys Met Tyr Ser Met Ser Asp Val
1385 335 340 345
1386
1387 AGA AGG GTG TTC CTT GGT CCA TAT GCC CAC AGG GAT GGA CCC AAC TAT
1388 1107
1389 Arg Arg Val Phe Leu Gly Pro Tyr Ala His Arg Asp Gly Pro Asn Tyr
1390 350 355 360
1391
1392 CAA TGG GTG CCT TAT CAA GGA AGA GTC CCC TAT CCA CGG CCA GGA ACT
1393 1155
1394 Gln Trp Val Pro Tyr Gln Gly Arg Val Pro Tyr Pro Arg Pro Gly Thr
1395 365 370 375 380
1396
1397 TGT CCC AGC AAA ACA TTT GGT GGT TTT GAC TCT ACA AAG GAC CTT CCT
1398 1203
1399 Cys Pro Ser Lys Thr Phe Gly Gly Phe Asp Ser Thr Lys Asp Leu Pro
1400 385 390 395
1401
1402 GAT GAT GTT ATA ACC TTT GCA AGA AGT CAT CCA GCC ATG TAC AAT CCA
1403 1251
1404 Asp Asp Val Ile Thr Phe Ala Arg Ser His Pro Ala Met Tyr Asn Pro
1405 400 405 410
1406
1407 GTG TTT CCT ATG AAC AAT CGC CCA ATA GTG ATC AAA ACG GAT GTA AAT
1408 1299
1409 Val Phe Pro Met Asn Asn Arg Pro Ile Val Ile Lys Thr Asp Val Asn
1410 415 420 425
1411
1412 TAT CAA TTT ACA CAA ATT GTC GTA GAC CGA GTG GAT GCA GAA GAT GGA
1413 1347
1414 Tyr Gln Phe Thr Gln Ile Val Val Asp Arg Val Asp Ala Glu Asp Gly
1415 430 435 440
1416
1417 CAG TAT GAT GTT ATG TTT ATC GGA ACA GAT GTT GGG ACC GTT CTT AAA
1418 1395
1419 Gln Tyr Asp Val Met Phe Ile Gly Thr Asp Val Gly Thr Val Leu Lys
1420 445 450 455 460
1421
1422 GTA GTT TCA ATT CCT AAG GAG ACT TGG TAT GAT TTA GAA GAG GTT CTG
1423 1443
1424 Val Val Ser Ile Pro Lys Glu Thr Trp Tyr Asp Leu Glu Glu Val Leu
1425 465 470 475
1426
1427 CTG GAA GAA ATG ACA GTT TTT CGG GAA CCG ACT GCT ATT TCA GCA ATG
1428 1491

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:16**INPUT SET: S7086.raw**

1429 Leu Glu Glu Met Thr Val Phe Arg Glu Pro Thr Ala Ile Ser Ala Met
1430 480 485 490
1431
1432 GAG CTT TCC ACT AAG CAG CAA CAA CTA TAT ATT GGT TCA ACG GCT GGG
1433 1539
1434 Glu Leu Ser Thr Lys Gln Gln Leu Tyr Ile Gly Ser Thr Ala Gly
1435 495 500 505
1436
1437 GTT GCC CAG CTC CCT TTA CAC CGG TGT GAT ATT TAC GGG AAA GCG TGT
1438 1587
1439 Val Ala Gln Leu Pro Leu His Arg Cys Asp Ile Tyr Gly Lys Ala Cys
1440 510 515 520
1441
1442 GCT GAG TGT TGC CTC GCC CGA GAC CCT TAC TGT GCT TGG GAT GGT TCT
1443 1635
1444 Ala Glu Cys Cys Leu Ala Arg Asp Pro Tyr Cys Ala Trp Asp Gly Ser
1445 525 530 535 540
1446
1447 GCA TGT TCT CGC TAT TTT CCC ACT GCA AAG AGA CGC ACA AGA CGA CAA
1448 1683
1449 Ala Cys Ser Arg Tyr Phe Pro Thr Ala Lys Arg Arg Thr Arg Arg Gln
1450 545 550 555
1451
1452 GAT ATA AGA AAT GGA GAC CCA CTG ACT CAC TGT TCA GAC TTA CAC CAT
1453 1731
1454 Asp Ile Arg Asn Gly Asp Pro Leu Thr His Cys Ser Asp Leu His His
1455 560 565 570
1456
1457 GAT AAT CAC CAT GGC CAC AGC CCT GAA GAG AGA ATC ATC TAT GGT GTA
1458 1779
1459 Asp Asn His His Gly His Ser Pro Glu Glu Arg Ile Ile Tyr Gly Val
1460 575 580 585
1461
1462 GAG AAT AGT AGC ACA TTT TTG GAA TGC AGT CCG AAG TCG CAG AGA GCG
1463 1827
1464 Glu Asn Ser Ser Thr Phe Leu Glu Cys Ser Pro Lys Ser Gln Arg Ala
1465 590 595 600
1466
1467 CTG GTC TAT TGG CAA TTC CAG AGG CGA AAT GAA GAG CGA AAA GAA GAG
1468 1875
1469 Leu Val Tyr Trp Gln Phe Gln Arg Arg Asn Glu Glu Arg Lys Glu Glu
1470 605 610 615 620
1471
1472 ATC AGA GTG GAT GAT CAT ATC ATC AGG ACA GAT CAA GGC CTT CTG CTA
1473 1923
1474 Ile Arg Val Asp Asp His Ile Ile Arg Thr Asp Gln Gly Leu Leu Leu
1475 625 630 635
1476
1477 CGT AGT CTA CAA CAG AAG GAT TCA GGC AAT TAC CTC TGC CAT GCG GTG
1478 1971
1479 Arg Ser Leu Gln Gln Lys Asp Ser Gly Asn Tyr Leu Cys His Ala Val

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:22**INPUT SET: S7086.raw**

1480	640	645	650
1481			
1482	GAA CAT GGG TTC ATA CAA ACT CTT CTT AAG GTA ACC CTG GAA GTC ATT		
1483	2019		
1484	Glu His Gly Phe Ile Gln Thr Leu Leu Lys Val Thr Leu Glu Val Ile		
1485	655	660	665
1486			
1487	GAC ACA GAG CAT TTG GAA GAA CTT CTT CAT AAA GAT GAT GAT GGA GAT		
1488	2067		
1489	Asp Thr Glu His Leu Glu Glu Leu Leu His Lys Asp Asp Asp Gly Asp		
1490	670	675	680
1491			
1492	GGC TCT AAG ACC AAA GAA ATG TCC AAT AGC ATG ACA CCT AGC CAG AAG		
1493	2115		
1494	Gly Ser Lys Thr Lys Glu Met Ser Asn Ser Met Thr Pro Ser Gln Lys		
1495	685	690	695
1496			700
1497	GTC TGG TAC AGA GAC TTC ATG CAG CTC ATC AAC CAC CCC AAT CTC AAC		
1498	2163		
1499	Val Trp Tyr Arg Asp Phe Met Gln Leu Ile Asn His Pro Asn Leu Asn		
1500	705	710	715
1501			
1502	ACG ATG GAT GAG TTC TGT GAA CAA GTT TGG AAA AGG GAC CGA AAA CAA		
1503	2211		
1504	Thr Met Asp Glu Phe Cys Glu Gln Val Trp Lys Arg Asp Arg Lys Gln		
1505	720	725	730
1506			
1507	CGT CGG CAA AGG CCA GGA CAT ACC CCA GGG AAC AGT AAC AAA TGG AAG		
1508	2259		
1509	Arg Arg Gln Arg Pro Gly His Thr Pro Gly Asn Ser Asn Lys Trp Lys		
1510	735	740	745
1511			
1512	CAC TTA CAA GAA AAT AAG AAA GGT AGA AAC AGC AGG ACC CAC GAA TTT		
1513	2307		
1514	His Leu Gln Glu Asn Lys Lys Gly Arg Asn Arg Arg Thr His Glu Phe		
1515	750	755	760
1516			
1517	GAG AGG GCA CCC AGG AGT GTC TGAGCTGCAT TACCTCTAGA AACCTCAAAC		
1518	2358		
1519	Glu Arg Ala Pro Arg Ser Val		
1520	765	770	
1521			
1522	AAGTAGAAC TTGCCTAGAC AATAACTGGA AAAACAAATG CAATATACAT GAACTTTTT		
1523	2418		
1524			
1525	CATGGCATTA TGTGGATGTT TACAATGGTG GGAAATTCACTG CTGAGTTCCA CCAATTATAA		
1526	2478		
1527			
1528	ATTAATCCA TGAGTAACCT TCCTAATAGG CTTTTTTTC CTAATACCAC CGGGTTAAAA		
1529	2538		
1530			

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:29**INPUT SET: S7086.raw**

1531 GTAAGAGACA GCTGAACCCT CGTGGAGCCA TTCATACAGG TCCCTATTAA AGGAACGGAA
1532 2598
1533
1534 TTC
1535 2601
1536
1537
1538 (2) INFORMATION FOR SEQ ID NO:54:
1539
1540 (i) SEQUENCE CHARACTERISTICS:
1541 (A) LENGTH: 771 amino acids
1542 (B) TYPE: amino acid
1543 (D) TOPOLOGY: linear
1544
1545 (ii) MOLECULE TYPE: protein
1546
1547 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:
1548
1549 Met Gly Trp Leu Thr Arg Ile Val Cys Leu Phe Trp Gly Val Leu Leu
1550 1 5 10 15
1551
1552 Thr Ala Arg Ala Asn Tyr Gln Asn Gly Lys Asn Asn Val Pro Arg Leu
1553 20 25 30
1554
1555 Lys Leu Ser Tyr Lys Glu Met Leu Glu Ser Asn Asn Val Ile Thr Phe
1556 35 40 45
1557
1558 Asn Gly Leu Ala Asn Ser Ser Tyr His Thr Phe Leu Leu Asp Glu
1559 50 55 60
1560
1561 Glu Arg Ser Arg Leu Tyr Val Gly Ala Lys Asp His Ile Phe Ser Phe
1562 65 70 75 80
1563
1564 Asp Leu Val Asn Ile Lys Asp Phe Gln Lys Ile Val Trp Pro Val Ser
1565 85 90 95
1566
1567 Tyr Thr Arg Arg Asp Glu Cys Lys Trp Ala Gly Lys Asp Ile Leu Lys
1568 100 105 110
1569
1570 Glu Cys Ala Asn Phe Ile Lys Val Leu Lys Ala Tyr Asn Gln Thr His
1571 115 120 125
1572
1573 Leu Tyr Ala Cys Gly Thr Gly Ala Phe His Pro Ile Cys Thr Tyr Ile
1574 130 135 140
1575
1576 Glu Ile Gly His His Pro Glu Asp Asn Ile Phe Lys Leu Glu Asn Ser
1577 145 150 155 160
1578
1579 His Phe Glu Asn Gly Arg Gly Lys Ser Pro Tyr Asp Pro Lys Leu Leu
1580 165 170 175
1581

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:35**INPUT SET: S7086.raw**

1582 Thr Ala Ser Leu Leu Ile Asp Gly Glu Leu Tyr Ser Gly Thr Ala Ala
1583 180 185 190
1584
1585 Asp Phe Met Gly Arg Asp Phe Ala Ile Phe Arg Thr Leu Gly His His
1586 195 200 205
1587
1588 His Pro Ile Arg Thr Glu Gln His Asp Ser Arg Trp Leu Asn Asp Pro
1589 210 215 220
1590
1591 Lys Phe Ile Ser Ala His Leu Ile Ser Glu Ser Asp Asn Pro Glu Asp
1592 225 230 235 240
1593
1594 Asp Lys Val Tyr Phe Phe Arg Glu Asn Ala Ile Asp Gly Glu His
1595 245 250 255
1596
1597 Ser Gly Lys Ala Thr His Ala Arg Ile Gly Gln Ile Cys Lys Asn Asp
1598 260 265 270
1599
1600 Phe Gly Gly His Arg Ser Leu Val Asn Lys Trp Thr Thr Phe Leu Lys
1601 275 280 285
1602
1603 Ala Arg Leu Ile Cys Ser Val Pro Gly Pro Asn Gly Ile Asp Thr His
1604 290 295 300
1605
1606 Phe Asp Glu Leu Gln Asp Val Phe Leu Met Asn Phe Lys Asp Pro Lys
1607 305 310 315 320
1608
1609 Asn Pro Val Val Tyr Gly Val Phe Thr Thr Ser Ser Asn Ile Phe Lys
1610 325 330 335
1611
1612 Gly Ser Ala Val Cys Met Tyr Ser Met Ser Asp Val Arg Arg Val Phe
1613 340 345 350
1614
1615 Leu Gly Pro Tyr Ala His Arg Asp Gly Pro Asn Tyr Gln Trp Val Pro
1616 355 360 365
1617
1618 Tyr Gln Gly Arg Val Pro Tyr Pro Arg Pro Gly Thr Cys Pro Ser Lys
1619 370 375 380
1620
1621 Thr Phe Gly Gly Phe Asp Ser Thr Lys Asp Leu Pro Asp Asp Val Ile
1622 385 390 395 400
1623
1624 Thr Phe Ala Arg Ser His Pro Ala Met Tyr Asn Pro Val Phe Pro Met
1625 405 410 415
1626
1627 Asn Asn Arg Pro Ile Val Ile Lys Thr Asp Val Asn Tyr Gln Phe Thr
1628 420 425 430
1629
1630 Gln Ile Val Val Asp Arg Val Asp Ala Glu Asp Gly Gln Tyr Asp Val
1631 435 440 445
1632

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:41**INPUT SET: S7086.raw**

1633 Met Phe Ile Gly Thr Asp Val Gly Thr Val Leu Lys Val Val Ser Ile
1634 450 455 460
1635
1636 Pro Lys Glu Thr Trp Tyr Asp Leu Glu Glu Val Leu Leu Glu Glu Met
1637 465 470 475 480
1638
1639 Thr Val Phe Arg Glu Pro Thr Ala Ile Ser Ala Met Glu Leu Ser Thr
1640 485 490 495
1641
1642 Lys Gln Gln Gln Leu Tyr Ile Gly Ser Thr Ala Gly Val Ala Gln Leu
1643 500 505 510
1644
1645 Pro Leu His Arg Cys Asp Ile Tyr Gly Lys Ala Cys Ala Glu Cys Cys
1646 515 520 525
1647
1648 Leu Ala Arg Asp Pro Tyr Cys Ala Trp Asp Gly Ser Ala Cys Ser Arg
1649 530 535 540
1650
1651 Tyr Phe Pro Thr Ala Lys Arg Arg Thr Arg Arg Gln Asp Ile Arg Asn
1652 545 550 555 560
1653
1654 Gly Asp Pro Leu Thr His Cys Ser Asp Leu His His Asp Asn His His
1655 565 570 575
1656
1657 Gly His Ser Pro Glu Glu Arg Ile Ile Tyr Gly Val Glu Asn Ser Ser
1658 580 585 590
1659
1660 Thr Phe Leu Glu Cys Ser Pro Lys Ser Gln Arg Ala Leu Val Tyr Trp
1661 595 600 605
1662
1663 Gln Phe Gln Arg Arg Asn Glu Glu Arg Lys Glu Glu Ile Arg Val Asp
1664 610 615 620
1665
1666 Asp His Ile Ile Arg Thr Asp Gln Gly Leu Leu Arg Ser Leu Gln
1667 625 630 635 640
1668
1669 Gln Lys Asp Ser Gly Asn Tyr Leu Cys His Ala Val Glu His Gly Phe
1670 645 650 655
1671
1672 Ile Gln Thr Leu Leu Lys Val Thr Leu Glu Val Ile Asp Thr Glu His
1673 660 665 670
1674
1675 Leu Glu Glu Leu Leu His Lys Asp Asp Asp Gly Asp Gly Ser Lys Thr
1676 675 680 685
1677
1678 Lys Glu Met Ser Asn Ser Met Thr Pro Ser Gln Lys Val Trp Tyr Arg
1679 690 695 700
1680
1681 Asp Phe Met Gln Leu Ile Asn His Pro Asn Leu Asn Thr Met Asp Glu
1682 705 710 715 720
1683

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:47**INPUT SET: S7086.raw**

1684 Phe Cys Glu Gln Val Trp Lys Arg Asp Arg Lys Gln Arg Arg Gln Arg
1685 725 730 735
1686
1687 Pro Gly His Thr Pro Gly Asn Ser Asn Lys Trp Lys His Leu Gln Glu
1688 740 745 750
1689
1690 Asn Lys Lys Gly Arg Asn Arg Arg Thr His Glu Phe Glu Arg Ala Pro
1691 755 760 765
1692
1693 Arg Ser Val
1694 770
1695
1696
1697 (2) INFORMATION FOR SEQ ID NO:55:
1698
1699 (i) SEQUENCE CHARACTERISTICS:
--> 1700 (A) LENGTH: 1332 base pairs
1701 (B) TYPE: nucleic acid
1702 (C) STRANDEDNESS: double
1703 (D) TOPOLOGY: linear
1704
1705 (ii) MOLECULE TYPE: cDNA
1706
1707
1708 (ix) FEATURE:
1709 (A) NAME/KEY: CDS
1710 (B) LOCATION: 7..1329
1711
1712
1713 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:
1714
1715 GGAATA ATG ATG GTA TTA TTA CAT GCT GTA TAC TCT ATA GTC TTT GTA
1716 48
1717 Met Met Val Leu Leu His Ala Val Tyr Ser Ile Val Phe Val
1718 1 5 10
1719
1720 GAT GTT ATA ATC ATA AAA GTA CAG AGG TAT ATC AAC GAT ATT CTA ACT
1721 96
1722 Asp Val Ile Ile Ile Lys Val Gln Arg Tyr Ile Asn Asp Ile Leu Thr
1723 15 20 25 30
1724
1725 CTT GAC ATT TTT TAT TTA TTT AAA ATG ATA CCT TTG TTA TTT ATT TTA
1726 144
1727 Leu Asp Ile Phe Tyr Leu Phe Lys Met Ile Pro Leu Leu Phe Ile Leu
1728 35 40 45
1729
1730 TTC TAT TTT GCT AAC GGT ATC GAA TGG CAT AAG TTT GAA ACG AGT GAA
1731 192
1732 Phe Tyr Phe Ala Asn Gly Ile Glu Trp His Lys Phe Glu Thr Ser Glu
1733 50 55 60
1734

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:26:54**INPUT SET: S7086.raw**

1735 GAA ATA ATT TCT ACT TAC TTA TTA GAC GAC GTA TTA TAC ACG GGT GTT
1736 240
1737 Glu Ile Ile Ser Thr Tyr Leu Leu Asp Asp Val Leu Tyr Thr Gly Val
1738 65 70 75
1739
1740 AAT GGG GCG GTA TAC ACA TTT TCA AAT AAT AAA CTA AAC AAA ACT GGT
1741 288
1742 Asn Gly Ala Val Tyr Thr Phe Ser Asn Asn Lys Leu Asn Lys Thr Gly
1743 80 85 90
1744
1745 TTA ACT AAT AAT TAT ATA ACA ACA TCT ATA AAA GTA GAG GAT GCG
1746 336
1747 Leu Thr Asn Asn Asn Tyr Ile Thr Thr Ser Ile Lys Val Glu Asp Ala
1748 95 100 105 110
1749
1750 GAT AAG GAT ACA TTA GTA TGC GGA ACC AAT AAC GGA AAT CCC AAA TGT
1751 384
1752 Asp Lys Asp Thr Leu Val Cys Gly Thr Asn Asn Gly Asn Pro Lys Cys
1753 115 120 125
1754
1755 TGG AAA ATA GAC GGT TCA GAC GAC CCA AAA CAT AGA GGT AGA GGA TAC
1756 432
1757 Trp Lys Ile Asp Gly Ser Asp Asp Pro Lys His Arg Gly Arg Gly Tyr
1758 130 135 140
1759
1760 GCT CCT TAT CAA AAT AGC AAA GTA ACG ATA ATC AGT CAC AAC GGA TGT
1761 480
1762 Ala Pro Tyr Gln Asn Ser Lys Val Thr Ile Ile Ser His Asn Gly Cys
1763 145 150 155
1764
1765 GTA CTA TCT GAC ATA AAC ATA TCA AAA GAA GGA ATT AAA CGA TGG AGA
1766 528
1767 Val Leu Ser Asp Ile Asn Ile Ser Lys Glu Gly Ile Lys Arg Trp Arg
1768 160 165 170
1769
1770 AGA TTT GAC GGA CCA TGT GGT TAT GAT TTA TAC ACG GCG GAT AAC GTA
1771 576
1772 Arg Phe Asp Gly Pro Cys Gly Tyr Asp Leu Tyr Thr Ala Asp Asn Val
1773 175 180 185 190
1774
1775 ATT CCA AAA GAT GGT TTA CGA GGA GCA TTC GTC GAT AAA GAT GGT ACT
1776 624
1777 Ile Pro Lys Asp Gly Leu Arg Gly Ala Phe Val Asp Lys Asp Gly Thr
1778 195 200 205
1779
1780 TAT GAC AAA GTT TAC ATT CTT TTC ACT GAT ACT ATC GGC TCA AAG AGA
1781 672
1782 Tyr Asp Lys Val Tyr Ile Leu Phe Thr Asp Thr Ile Gly Ser Lys Arg
1783 210 215 220
1784
1785 ATT GTC AAA ATT CCG TAT ATA GCA CAA ATG TGC CTA AAC GAC GAA GGT

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713DATE: 12/17/93
TIME: 19:27:01

INPUT SET: S7086.raw

1786 720
1787 Ile Val Lys Ile Pro Tyr Ile Ala Gln Met Cys Leu Asn Asp Glu Gly
1788 225 230 235
1789
1790 GGT CCA TCA TCA TTG TCT AGT CAT AGA TGG TCG ACG TTT CTC AAA GTC
1791 768
1792 Gly Pro Ser Ser Leu Ser Ser His Arg Trp Ser Thr Phe Leu Lys Val
1793 240 245 250
1794
1795 GAA TTA GAA TGT GAT ATC GAC GGA AGA AGT TAT AGA CAA ATT ATT CAT
1796 816
1797 Glu Leu Glu Cys Asp Ile Asp Gly Arg Ser Tyr Arg Gln Ile Ile His
1798 255 260 265 270
1799
1800 TCT AGA ACT ATA AAA ACA GAT AAT GAT ACG ATA CTA TAT GTA TTC TTC
1801 864
1802 Ser Arg Thr Ile Lys Thr Asp Asn Asp Thr Ile Leu Tyr Val Phe Phe
1803 275 280 285
1804
1805 GAT AGT CCT TAT TCC AAG TCC GCA TTA TGT ACC TAT TCT ATG AAT ACC
1806 912
1807 Asp Ser Pro Tyr Ser Lys Ser Ala Leu Cys Thr Tyr Ser Met Asn Thr
1808 290 295 300
1809
1810 ATT AAA CAA TCT TTT TCT ACG TCA AAA TTG GAA GGA TAT ACA AAG CAA
1811 960
1812 Ile Lys Gln Ser Phe Ser Thr Ser Lys Leu Glu Gly Tyr Thr Lys Gln
1813 305 310 315
1814
1815 TTG CCG TCG CCA GCC TCT GGT ATA TGT CTA CCA GCT GGA AAA GTT GTT
1816 1008
1817 Leu Pro Ser Pro Ala Ser Gly Ile Cys Leu Pro Ala Gly Lys Val Val
1818 320 325 330
1819
1820 CCA CAT ACC ACG TTT GAA GTC ATA GAA AAA TAT AAT GTA CTA GAT GAT
1821 1056
1822 Pro His Thr Thr Phe Glu Val Ile Glu Lys Tyr Asn Val Leu Asp Asp
1823 335 340 345 350
1824
1825 ATT ATA AAG CCT TTA TCT AAC CAA CCT ATC TTC GAA GGA CCG TCT GGT
1826 1104
1827 Ile Ile Lys Pro Leu Ser Asn Gln Pro Ile Phe Glu Gly Pro Ser Gly
1828 355 360 365
1829
1830 GTT AAA TGG TTC GAT ATA AAG GAG AAG GAA AAT GAA CAT CGG GAA TAT
1831 1152
1832 Val Lys Trp Phe Asp Ile Lys Glu Lys Glu Asn Glu His Arg Glu Tyr
1833 370 375 380
1834
1835 AGA ATA TAC TTC ATA AAA GAA AAT TCT ATA TAT TCG TTC GAT ACA AAA
1836 1200

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:08**INPUT SET: S7086.raw**

1837 Arg Ile Tyr Phe Ile Lys Glu Asn Ser Ile Tyr Ser Phe Asp Thr Lys
1838 385 390 395
1839
1840 TCT AAA CAA ACT CGT AGC TCG CAA GTC GAT GCG CGA CTA TTT TCA GTA
1841 1248
1842 Ser Lys Gln Thr Arg Ser Ser Gln Val Asp Ala Arg Leu Phe Ser Val
1843 400 405 410
1844
1845 ATG GTA ACT TCG AAA CCG TTA TTT ATA GCA GAT ATA GGG ATA GGA GTA
1846 1296
1847 Met Val Thr Ser Lys Pro Leu Phe Ile Ala Asp Ile Gly Ile Gly Val
1848 415 420 425 430
1849
1850 GGA ATG CCA CAA ATG AAA AAA ATA CTT AAA ATG TAA
1851 1332
1852 Gly Met Pro Gln Met Lys Lys Ile Leu Lys Met
1853 435 440
1854
1855
1856 (2) INFORMATION FOR SEQ ID NO:56:
1857
1858 (i) SEQUENCE CHARACTERISTICS:
1859 (A) LENGTH: 441 amino acids
1860 (B) TYPE: amino acid
1861 (D) TOPOLOGY: linear
1862
1863 (ii) MOLECULE TYPE: protein
1864
1865 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:
1866
1867 Met Met Val Leu Leu His Ala Val Tyr Ser Ile Val Phe Val Asp Val
1868 1 5 10 15
1869
1870 Ile Ile Ile Lys Val Gln Arg Tyr Ile Asn Asp Ile Leu Thr Leu Asp
1871 20 25 30
1872
1873 Ile Phe Tyr Leu Phe Lys Met Ile Pro Leu Leu Phe Ile Leu Phe Tyr
1874 35 40 45
1875
1876 Phe Ala Asn Gly Ile Glu Trp His Lys Phe Glu Thr Ser Glu Glu Ile
1877 50 55 60
1878
1879 Ile Ser Thr Tyr Leu Leu Asp Asp Val Leu Tyr Thr Gly Val Asn Gly
1880 65 70 75 80
1881
1882 Ala Val Tyr Thr Phe Ser Asn Asn Lys Leu Asn Lys Thr Gly Leu Thr
1883 85 90 95
1884
1885 Asn Asn Asn Tyr Ile Thr Thr Ser Ile Lys Val Glu Asp Ala Asp Lys
1886 100 105 110
1887

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:14**INPUT SET: S7086.raw**

1888 Asp Thr Leu Val Cys Gly Thr Asn Asn Gly Asn Pro Lys Cys Trp Lys
1889 115 120 125
1890
1891 Ile Asp Gly Ser Asp Asp Pro Lys His Arg Gly Arg Gly Tyr Ala Pro
1892 130 135 140
1893
1894 Tyr Gln Asn Ser Lys Val Thr Ile Ile Ser His Asn Gly Cys Val Leu
1895 145 150 155 160
1896
1897 Ser Asp Ile Asn Ile Ser Lys Glu Gly Ile Lys Arg Trp Arg Arg Phe
1898 165 170 175
1899
1900 Asp Gly Pro Cys Gly Tyr Asp Leu Tyr Thr Ala Asp Asn Val Ile Pro
1901 180 185 190
1902
1903 Lys Asp Gly Leu Arg Gly Ala Phe Val Asp Lys Asp Gly Thr Tyr Asp
1904 195 200 205
1905
1906 Lys Val Tyr Ile Leu Phe Thr Asp Thr Ile Gly Ser Lys Arg Ile Val
1907 210 215 220
1908
1909 Lys Ile Pro Tyr Ile Ala Gln Met Cys Leu Asn Asp Glu Gly Gly Pro
1910 225 230 235 240
1911
1912 Ser Ser Leu Ser Ser His Arg Trp Ser Thr Phe Leu Lys Val Glu Leu
1913 245 250 255
1914
1915 Glu Cys Asp Ile Asp Gly Arg Ser Tyr Arg Gln Ile Ile His Ser Arg
1916 260 265 270
1917
1918 Thr Ile Lys Thr Asp Asn Asp Thr Ile Leu Tyr Val Phe Phe Asp Ser
1919 275 280 285
1920
1921 Pro Tyr Ser Lys Ser Ala Leu Cys Thr Tyr Ser Met Asn Thr Ile Lys
1922 290 295 300
1923
1924 Gln Ser Phe Ser Thr Ser Lys Leu Glu Gly Tyr Thr Lys Gln Leu Pro
1925 305 310 315 320
1926
1927 Ser Pro Ala Ser Gly Ile Cys Leu Pro Ala Gly Lys Val Val Pro His
1928 325 330 335
1929
1930 Thr Thr Phe Glu Val Ile Glu Lys Tyr Asn Val Leu Asp Asp Ile Ile
1931 340 345 350
1932
1933 Lys Pro Leu Ser Asn Gln Pro Ile Phe Glu Gly Pro Ser Gly Val Lys
1934 355 360 365
1935
1936 Trp Phe Asp Ile Lys Glu Lys Glu Asn Glu His Arg Glu Tyr Arg Ile
1937 370 375 380
1938

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713DATE: 12/17/93
TIME: 19:27:21

INPUT SET: S7086.raw

1939 Tyr Phe Ile Lys Glu Asn Ser Ile Tyr Ser Phe Asp Thr Lys Ser Lys
1940 385 390 395 400
1941
1942 Gln Thr Arg Ser Ser Gln Val Asp Ala Arg Leu Phe Ser Val Met Val
1943 405 410 415
1944
1945 Thr Ser Lys Pro Leu Phe Ile Ala Asp Ile Gly Ile Gly Val Gly Met
1946 420 425 430
1947
1948 Pro Gln Met Lys Lys Ile Leu Lys Met
1949 435 440
1950
1951
1952 (2) INFORMATION FOR SEQ ID NO:57:
1953
--> 1954 (i) SEQUENCE CHARACTERISTICS:
1955 (A) LENGTH: 2854 base pairs
1956 (B) TYPE: nucleic acid
1957 (C) STRANDEDNESS: double
1958 (D) TOPOLOGY: linear
1959
1960 (ii) MOLECULE TYPE: cDNA
1961
1962
1963 (ix) FEATURE:
1964 (A) NAME/KEY: CDS
1965 (B) LOCATION: 451..2640
1966
1967
1968 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:
1969
1970 ATTCCACCTC CCGCTGACCG CCTACGCCGC GACGATCTT CCTCTCGCCA GGCGAAA
1971 60 ACT
1972
1973 ACGACGTGTC AACAAACATTT TTGTTTTTC TGCTTCGTG TTTTCATGTT CCGTGAAACC
1974 120
1975
1976 GCTTCTCGCA TTACCACTCT TCCGTTCCC AGTGTGTT TTCTCCGTT CTTTCATCGT
1977 180
1978
1979 GGATGTTTG TTTGGTGTAA GCGAGTGACG AGCTTATGTC ATTAACGTA CATCCAATCT
1980 240
1981
1982 GTCGGTATAT TGGTGTGTGA TATTTACTA TTATATATTT AGCCATCACT TGAAAGCCGT
1983 300
1984
1985 GAAAAATTG TGAAAGTGGAA GAGGAAAAAG AAAAGGCGCA GAAGGCTTT TAAGCTTCAT
1986 360
1987
1988 GGATATGTGC TCTACGCTTC AACTACTGTC GCAGAACAT CTTCCGGAA AGGAAATTTC
1989 420

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:28**INPUT SET: S7086.raw**

1990
1991 GCCTGAAATG GTGCCGGC CGCACTGAAC ATG CGG GCG GCG CTG GTG GCC GTC
1992 474
1993 Met Arg Ala Ala Leu Val Ala Val
1994 1 5
1995
1996 GCG GCG CTG CTT TGG GTG GCG CTG CAC GCC GCC GCA TGG GTC AAC GAC
1997 522
1998 Ala Ala Leu Leu Trp Val Ala Leu His Ala Ala Ala Trp Val Asn Asp
1999 10 15 20
2000
2001 GTC AGC CCC AAG ATG TAC GTC CAG TTC GGT GAG GAA CGG GTG CAA CGC
2002 570
2003 Val Ser Pro Lys Met Tyr Val Gln Phe Gly Glu Glu Arg Val Gln Arg
2004 25 30 35 40
2005
2006 TTC CTG GGC AAT GAA TCG CAC AAA GAC CAC TTC AAG CTG CTG GAG AAG
2007 618
2008 Phe Leu Gly Asn Glu Ser His Lys Asp His Phe Lys Leu Leu Glu Lys
2009 45 50 55
2010
2011 GAC CAC AAC TCG CTC CTC GTA GGA GCT AGG AAC ATC GTC TAC AAT ATC
2012 666
2013 Asp His Asn Ser Leu Leu Val Gly Ala Arg Asn Ile Val Tyr Asn Ile
2014 60 65 70
2015
2016 AGC CTT CGA GAC CTC ACA GAA TTC ACC GAG CAG AGG ATC GAG TGG CAC
2017 714
2018 Ser Leu Arg Asp Leu Thr Glu Phe Thr Glu Gln Arg Ile Glu Trp His
2019 75 80 85
2020
2021 TCG TCA GGT GCC CAT CGC GAG CTC TGC TAC CTC AAG GGG AAG TCA GAG
2022 762
2023 Ser Ser Gly Ala His Arg Glu Leu Cys Tyr Leu Lys Gly Lys Ser Glu
2024 90 95 100
2025
2026 GAC GAC TGC CAG AAC TAC ATC CGA GTC CTG GCG AAA ATT GAC GAT GAC
2027 810
2028 Asp Asp Cys Gln Asn Tyr Ile Arg Val Leu Ala Lys Ile Asp Asp Asp
2029 105 110 115 120
2030
2031 CGC GTA CTC ATC TGC GGT ACG AAC GCC TAT AAG CCA CTA TGT CGG CAC
2032 858
2033 Arg Val Leu Ile Cys Gly Thr Asn Ala Tyr Lys Pro Leu Cys Arg His
2034 125 130 135
2035
2036 TAC GCC CTC AAG GAT GGA GAT TAT GTT GTA GAG AAA GAA TAT GAG GGA
2037 906
2038 Tyr Ala Leu Lys Asp Gly Asp Tyr Val Val Glu Lys Glu Tyr Glu Gly
2039 140 145 150
2040

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:34**INPUT SET: S7086.raw**

2041 AGA GGA TTG TGC CCA TTT GAC CCT GAC CAC AAC AGC ACT GCA ATA TAC
2042 954
2043 Arg Gly Leu Cys Pro Phe Asp Pro Asp His Asn Ser Thr Ala Ile Tyr
2044 155 160 165
2045
2046 AGT GAG GGA CAA TTG TAC TCA GCA ACA GTG GCA GAC TTC TCT GGA ACT
2047 1002
2048 Ser Glu Gly Gln Leu Tyr Ser Ala Thr Val Ala Asp Phe Ser Gly Thr
2049 170 175 180
2050
2051 GAC CCT CTC ATA TAC CGC GGC CCT CTA AGA ACA GAG AGA TCT GAC CTC
2052 1050
2053 Asp Pro Leu Ile Tyr Arg Gly Pro Leu Arg Thr Glu Arg Ser Asp Leu
2054 185 190 195 200
2055
2056 AAA CAA TTA AAT GCT CCT AAC TTT GTC AAC ACA ATG GAG TAC AAT GAT
2057 1098
2058 Lys Gln Leu Asn Ala Pro Asn Phe Val Asn Thr Met Glu Tyr Asn Asp
2059 205 210 215
2060
2061 TTT ATA TTC TTC TTC CGA GAG ACT GCT GTT GAG TAC ATC AAC TGC
2062 1146
2063 Phe Ile Phe Phe Phe Arg Glu Thr Ala Val Glu Tyr Ile Asn Cys
2064 220 225 230
2065
2066 GGA AAG GCT ATC TAT TCA AGA GTT GCC AGA GTC TGT AAA CAT GAC AAG
2067 1194
2068 Gly Lys Ala Ile Tyr Ser Arg Val Ala Arg Val Cys Lys His Asp Lys
2069 235 240 245
2070
2071 GGC GGC CCT CAT CAG GGT GAC AGA TGG ACT TCT TTT TTG AAA TCA
2072 1242
2073 Gly Gly Pro His Gln Gly Gly Asp Arg Trp Thr Ser Phe Leu Lys Ser
2074 250 255 260
2075
2076 CGT CTG AAC TGT TCC GTC CCT GGA GAT TAT CCA TTT TAC TTC AAT GAA
2077 1290
2078 Arg Leu Asn Cys Ser Val Pro Gly Asp Tyr Pro Phe Tyr Phe Asn Glu
2079 265 270 275 280
2080
2081 ATT CAG TCA ACA AGT GAC ATC ATT GAA GGA AAT TAT GGT GGT CAA GTG
2082 1338
2083 Ile Gln Ser Thr Ser Asp Ile Ile Glu Gly Asn Tyr Gly Gly Gln Val
2084 285 290 295
2085
2086 GAG AAA CTC ATC TAC GGT GTC TTC ACG ACA CCA GTG AAC TCT ATT GGT
2087 1386
2088 Glu Lys Leu Ile Tyr Gly Val Phe Thr Thr Pro Val Asn Ser Ile Gly
2089 300 305 310
2090
2091 GGC TCT GCT GTT TGT GCC TTC AGT ATG AAG TCA ATA CTT GAG TCA TTT

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:41**INPUT SET: S7086.raw**

2092 1434
2093 Gly Ser Ala Val Cys Ala Phe Ser Met Lys Ser Ile Leu Glu Ser Phe
2094 315 320 325
2095
2096 GAT GGT CCA TTT AAA GAG CAG GAA ACG ATG AAC TCA AAC TGG TTG GCA
2097 1482
2098 Asp Gly Pro Phe Lys Glu Gln Glu Thr Met Asn Ser Asn Trp Leu Ala
2099 330 335 340
2100
2101 GTG CCA AGC CTT AAA GTG CCA GAA CCA AGG CCT GGA CAA TGT GTG AAT
2102 1530
2103 Val Pro Ser Leu Lys Val Pro Glu Pro Arg Pro Gly Gln Cys Val Asn
2104 345 350 355 360
2105
2106 GAC AGT CGT ACA CTT CCT GAT GTG TCT GTC AAT TTT GTA AAG TCA CAT
2107 1578
2108 Asp Ser Arg Thr Leu Pro Asp Val Ser Val Asn Phe Val Lys Ser His
2109 365 370 375
2110
2111 ACA CTG ATG GAT GAG GCC GTG CCA GCA TTT TTT ACT CGG CCA ATT CTC
2112 1626
2113 Thr Leu Met Asp Glu Ala Val Pro Ala Phe Phe Thr Arg Pro Ile Leu
2114 380 385 390
2115
2116 ATT CGG ATC AGC TTA CAG TAC AGA TTT ACA AAA ATA GCT GTT GAT CAA
2117 1674
2118 Ile Arg Ile Ser Leu Gln Tyr Arg Phe Thr Lys Ile Ala Val Asp Gln
2119 395 400 405
2120
2121 CAA GTC CGA ACA CCA GAT GGG AAA GCG TAT GAT GTC CTG TTT ATA GGA
2122 1722
2123 Gln Val Arg Thr Pro Asp Gly Lys Ala Tyr Asp Val Leu Phe Ile Gly
2124 410 415 420
2125
2126 ACT GAT GAT GGC AAA GTG ATA AAA GCT TTG AAC TCT GCC TCC TTT GAT
2127 1770
2128 Thr Asp Asp Gly Lys Val Ile Lys Ala Leu Asn Ser Ala Ser Phe Asp
2129 425 430 435 440
2130
2131 TCA TCT GAT ACT GTA GAT AGT GTT GTA ATA GAA GAA CTG CAA GTG TTG
2132 1818
2133 Ser Ser Asp Thr Val Asp Ser Val Val Ile Glu Glu Leu Gln Val Leu
2134 445 450 455
2135
2136 CCA CCT GGA GTA CCT GTT AAG AAC CTG TAT GTG GTG CGA ATG GAT GGG
2137 1866
2138 Pro Pro Gly Val Pro Val Lys Asn Leu Tyr Val Val Arg Met Asp Gly
2139 460 465 470
2140
2141 GAT GAT AGC AAG CTG GTG GTT GTG TCT GAT GAT GAG ATT CTG GCA ATT
2142 1914

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:48**INPUT SET: S7086.raw**

2143 Asp Asp Ser Lys Leu Val Val Val Ser Asp Asp Glu Ile Leu Ala Ile
2144 475 480 485
2145
2146 AAG CTT CAT CGT TGT GGC TCA GAT AAA ATA ACA AAT TGT CGA GAA TGT
2147 1962
2148 Lys Leu His Arg Cys Gly Ser Asp Lys Ile Thr Asn Cys Arg Glu Cys
2149 490 495 500
2150
2151 GTG TCC TTG CAA GAT CCT TAC TGT GCA TGG GAC AAT GTA GAA TTA AAA
2152 2010
2153 Val Ser Leu Gln Asp Pro Tyr Cys Ala Trp Asp Asn Val Glu Leu Lys
2154 505 510 515 520
2155
2156 TGT ACA GCT GTA GGT TCA CCA GAC TGG AGT GCT GGA AAA AGA CGC TTT
2157 2058
2158 Cys Thr Ala Val Gly Ser Pro Asp Trp Ser Ala Gly Lys Arg Arg Phe
2159 525 530 535
2160
2161 ATT CAG AAC ATT TCA CTC GGT GAA CAT AAA GCT TGT GGT GGA CGT CCA
2162 2106
2163 Ile Gln Asn Ile Ser Leu Gly Glu His Lys Ala Cys Gly Arg Pro
2164 540 545 550
2165
2166 CAA ACA GAA ATC GTT GCT TCT CCT GTA CCA ACT CAG CCG ACG ACA AAA
2167 2154
2168 Gln Thr Glu Ile Val Ala Ser Pro Val Pro Thr Gln Pro Thr Thr Lys
2169 555 560 565
2170
2171 TCT AGT GGC GAT CCC GTT CAT TCA ATC CAC CAG GCT GAA TTT GAA CCT
2172 2202
2173 Ser Ser Gly Asp Pro Val His Ser Ile His Gln Ala Glu Phe Glu Pro
2174 570 575 580
2175
2176 GAA ATT GAC AAC GAG ATT GTT ATT GGA GTA GAT GAC AGC AAC GTC ATT
2177 2250
2178 Glu Ile Asp Asn Glu Ile Val Ile Gly Val Asp Asp Ser Asn Val Ile
2179 585 590 595 600
2180
2181 CCT AAT ACC CTG GCT GAA ATA AAT CAT GCA GGT TCA AAG CTG CCT TCC
2182 2298
2183 Pro Asn Thr Leu Ala Glu Ile Asn His Ala Gly Ser Lys Leu Pro Ser
2184 605 610 615
2185
2186 TCC CAG GAA AAG TTG CCT ATT TAT ACA GCG GAG ACT CTG ACT ATT GCT
2187 2346
2188 Ser Gln Glu Lys Leu Pro Ile Tyr Thr Ala Glu Thr Leu Thr Ile Ala
2189 620 625 630
2190
2191 ATA GTT ACA TCA TGC CTT GGA GCT CTA GTT GTT GGC TTC ATC TCT GGA
2192 2394
2193 Ile Val Thr Ser Cys Leu Gly Ala Leu Val Val Gly Phe Ile Ser Gly

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:27:55**INPUT SET: S7086.raw**

2194 635 640 645
2195
2196 TTT CTT TTT TCT CGG CGA TGC AGG GGA GAG GAT TAC ACA GAC ATG CCT
2197 2442
2198 Phe Leu Phe Ser Arg Arg Cys Arg Gly Glu Asp Tyr Thr Asp Met Pro
2199 650 655 660
2200
2201 TTT CCA GAT CAA CGC CAT CAG CTA AAT AGG CTC ACT GAG GCT GGT CTG
2202 2490
2203 Phe Pro Asp Gln Arg His Gln Leu Asn Arg Leu Thr Glu Ala Gly Leu
2204 665 670 675 680
2205
2206 AAT GCA GAC TCA CCC TAT CTT CCA CCC TGT GCC AAT AAC AAG GCA GCC
2207 2538
2208 Asn Ala Asp Ser Pro Tyr Leu Pro Pro Cys Ala Asn Asn Lys Ala Ala
2209 685 690 695
2210
2211 ATA AAT CTT GTG CTC AAT GTC CCA CCA AAG AAT GCA AAT GGA AAA AAT
2212 2586
2213 Ile Asn Leu Val Leu Asn Val Pro Pro Lys Asn Ala Asn Gly Lys Asn
2214 700 705 710
2215
2216 GCC AAC TCT TCA GCT GAA AAC AAA CCA ATA CAG AAA GTA AAA AAG ACA
2217 2634
2218 Ala Asn Ser Ser Ala Glu Asn Lys Pro Ile Gln Lys Val Lys Lys Thr
2219 715 720 725
2220
2221 TAC ATT TAGCAGAAAT CTTTGGTATC TGTTTGTTG CAGACCCATG CCACTAGAGT
2222 2690
2223 Tyr Ile
2224 730
2225
2226 AACCAAGACT CTATTGAGAA ATGTCCTCAA GAAAGTTAAA AAGATGTAGA CTTCTGTAAT
2227 2750
2228
2229 CGAGAGCACC ACTTTCCATA GTAATACAGA ACAATGTGAA ATAAATACTA CAGAAGAAGT
2230 2810
2231
2232 CTTTGGTACA CAAAAAAAGTG TATAGTGATC TGTGATCAGT TTCTG
2233 2854
2234
2235
2236 (2) INFORMATION FOR SEQ ID NO:58:
2237
2238 (i) SEQUENCE CHARACTERISTICS:
2239 (A) LENGTH: 730 amino acids
2240 (B) TYPE: amino acid
2241 (D) TOPOLOGY: linear
2242
2243 (ii) MOLECULE TYPE: protein
2244

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:28:01

INPUT SET: S7086.raw

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

2245 Met Arg Ala Ala Leu Val Ala Val Ala Ala Leu Leu Trp Val Ala Leu
2246 1 5 10 15
2247 His Ala Ala Ala Trp Val Asn Asp Val Ser Pro Lys Met Tyr Val Gln
2248 20 25 30
2249 Phe Gly Glu Glu Arg Val Gln Arg Phe Leu Gly Asn Glu Ser His Lys
2250 35 40 45
2251 Asp His Phe Lys Leu Leu Glu Lys Asp His Asn Ser Leu Leu Val Gly
2252 50 55 60
2253 Ala Arg Asn Ile Val Tyr Asn Ile Ser Leu Arg Asp Leu Thr Glu Phe
2254 65 70 75 80
2255 Thr Glu Gln Arg Ile Glu Trp His Ser Ser Gly Ala His Arg Glu Leu
2256 85 90 95
2257 Cys Tyr Leu Lys Gly Lys Ser Glu Asp Asp Cys Gln Asn Tyr Ile Arg
2258 100 105 110
2259 Val Leu Ala Lys Ile Asp Asp Asp Arg Val Leu Ile Cys Gly Thr Asn
2260 115 120 125
2261 Ala Tyr Lys Pro Leu Cys Arg His Tyr Ala Leu Lys Asp Gly Asp Tyr
2262 130 135 140
2263 Val Val Glu Lys Glu Tyr Glu Gly Arg Gly Leu Cys Pro Phe Asp Pro
2264 145 150 155 160
2265 Asp His Asn Ser Thr Ala Ile Tyr Ser Glu Gly Gln Leu Tyr Ser Ala
2266 165 170 175
2267 Thr Val Ala Asp Phe Ser Gly Thr Asp Pro Leu Ile Tyr Arg Gly Pro
2268 180 185 190
2269 Leu Arg Thr Glu Arg Ser Asp Leu Lys Gln Leu Asn Ala Pro Asn Phe
2270 195 200 205
2271 Val Asn Thr Met Glu Tyr Asn Asp Phe Ile Phe Phe Phe Arg Glu
2272 210 215 220
2273 Thr Ala Val Glu Tyr Ile Asn Cys Gly Lys Ala Ile Tyr Ser Arg Val
2274 225 230 235 240
2275 Ala Arg Val Cys Lys His Asp Lys Gly Gly Pro His Gln Gly Gly Asp
2276 245 250 255
2277 Arg Trp Thr Ser Phe Leu Lys Ser Arg Leu Asn Cys Ser Val Pro Gly

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:08**INPUT SET: S7086.raw**

2296	260	265	270
2297			
2298	Asp Tyr Pro Phe Tyr Phe Asn Glu Ile Gln Ser Thr Ser Asp Ile Ile		
2299	275	280	285
2300			
2301	Glu Gly Asn Tyr Gly Gly Gln Val Glu Lys Leu Ile Tyr Gly Val Phe		
2302	290	295	300
2303			
2304	Thr Thr Pro Val Asn Ser Ile Gly Gly Ser Ala Val Cys Ala Phe Ser		
2305	305	310	315
2306			320
2307	Met Lys Ser Ile Leu Glu Ser Phe Asp Gly Pro Phe Lys Glu Gln Glu		
2308	325	330	335
2309			
2310	Thr Met Asn Ser Asn Trp Leu Ala Val Pro Ser Leu Lys Val Pro Glu		
2311	340	345	350
2312			
2313	Pro Arg Pro Gly Gln Cys Val Asn Asp Ser Arg Thr Leu Pro Asp Val		
2314	355	360	365
2315			
2316	Ser Val Asn Phe Val Lys Ser His Thr Leu Met Asp Glu Ala Val Pro		
2317	370	375	380
2318			
2319	Ala Phe Phe Thr Arg Pro Ile Leu Ile Arg Ile Ser Leu Gln Tyr Arg		
2320	385	390	395
2321			400
2322	Phe Thr Lys Ile Ala Val Asp Gln Gln Val Arg Thr Pro Asp Gly Lys		
2323	405	410	415
2324			
2325	Ala Tyr Asp Val Leu Phe Ile Gly Thr Asp Asp Gly Lys Val Ile Lys		
2326	420	425	430
2327			
2328	Ala Leu Asn Ser Ala Ser Phe Asp Ser Ser Asp Thr Val Asp Ser Val		
2329	435	440	445
2330			
2331	Val Ile Glu Glu Leu Gln Val Leu Pro Pro Gly Val Pro Val Lys Asn		
2332	450	455	460
2333			
2334	Leu Tyr Val Val Arg Met Asp Gly Asp Asp Ser Lys Leu Val Val Val		
2335	465	470	475
2336			480
2337	Ser Asp Asp Glu Ile Leu Ala Ile Lys Leu His Arg Cys Gly Ser Asp		
2338	,	485	490
2339			495
2340	Lys Ile Thr Asn Cys Arg Glu Cys Val Ser Leu Gln Asp Pro Tyr Cys		
2341	500	505	510
2342			
2343	Ala Trp Asp Asn Val Glu Leu Lys Cys Thr Ala Val Gly Ser Pro Asp		
2344	515	520	525
2345			
2346	Trp Ser Ala Gly Lys Arg Arg Phe Ile Gln Asn Ile Ser Leu Gly Glu		

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:28:15

INPUT SET: S7086.raw

2347 530 535 540
 2348
 2349 His Lys Ala Cys Gly Gly Arg Pro Gln Thr Glu Ile Val Ala Ser Pro
 2350 545 550 555 560
 2351
 2352 Val Pro Thr Gln Pro Thr Thr Lys Ser Ser Gly Asp Pro Val His Ser
 2353 565 570 575
 2354
 2355 Ile His Gln Ala Glu Phe Glu Pro Glu Ile Asp Asn Glu Ile Val Ile
 2356 580 585 590
 2357
 2358 Gly Val Asp Asp Ser Asn Val Ile Pro Asn Thr Leu Ala Glu Ile Asn
 2359 595 600 605
 2360
 2361 His Ala Gly Ser Lys Leu Pro Ser Ser Gln Glu Lys Leu Pro Ile Tyr
 2362 610 615 620
 2363
 2364 Thr Ala Glu Thr Leu Thr Ile Ala Ile Val Thr Ser Cys Leu Gly Ala
 2365 625 630 635 640
 2366
 2367 Leu Val Val Gly Phe Ile Ser Gly Phe Leu Phe Ser Arg Arg Cys Arg
 2368 645 650 655
 2369
 2370 Gly Glu Asp Tyr Thr Asp Met Pro Phe Pro Asp Gln Arg His Gln Leu
 2371 660 665 670
 2372
 2373 Asn Arg Leu Thr Glu Ala Gly Leu Asn Ala Asp Ser Pro Tyr Leu Pro
 2374 675 680 685
 2375
 2376 Pro Cys Ala Asn Asn Lys Ala Ala Ile Asn Leu Val Leu Asn Val Pro
 2377 690 695 700
 2378
 2379 Pro Lys Asn Ala Asn Gly Lys Asn Ala Asn Ser Ser Ala Glu Asn Lys
 2380 705 710 715 720
 2381
 2382 Pro Ile Gln Lys Val Lys Lys Thr Tyr Ile
 2383 725 730
 2384
 2385 (2) INFORMATION FOR SEQ ID NO:59:
 2386
 2387 (i) SEQUENCE CHARACTERISTICS:
 2388 (A) LENGTH: 3560 base pairs
 2389 (B) TYPE: nucleic acid
 2390 (C) STRANDEDNESS: double
 2391 (D) TOPOLOGY: linear
 2392
 2393 (ii) MOLECULE TYPE: cDNA
 2394
 2395
 2396 (ix) FEATURE:
 2397 (A) NAME/KEY: CDS

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:22**INPUT SET: S7086.raw**

2398 (B) LOCATION: 1..1953
2399
2400
2401 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:
2402
2403 GAG GAT GAT TGT CAG AAT TAC ATC ATC CGC ATC ATG GTG GTG CCA TCG CCG
2404 48
2405 Glu Asp Asp Cys Gln Asn Tyr Ile Arg Ile Met Val Val Pro Ser Pro
2406 1 5 10 15
2407
2408 GGT CGC CTT TTC GTT TGT GGC ACC AAC TCG TTC CGG CCC ATG TGC AAC
2409 96
2410 Gly Arg Leu Phe Val Cys Gly Thr Asn Ser Phe Arg Pro Met Cys Asn
2411 20 25 30
2412
2413 ACG TAT ATC ATT AGT GAC AGC AAC TAC ACG CTG GAG GCC ACG AAG AAC
2414 144
2415 Thr Tyr Ile Ile Ser Asp Ser Asn Tyr Thr Leu Glu Ala Thr Lys Asn
2416 35 40 45
2417
2418 GGA CAG GCG GTG TGC CCC TAC GAT CCA CGT CAC AAC TCC ACC TCT GTG
2419 192
2420 Gly Gln Ala Val Cys Pro Tyr Asp Pro Arg His Asn Ser Thr Ser Val
2421 50 55 60
2422
2423 CTG GCC GAC AAC GAA CTG TAT TCC GGT ACC GTG GCG GAT TTC AGT GGC
2424 240
2425 Leu Ala Asp Asn Glu Leu Tyr Ser Gly Thr Val Ala Asp Phe Ser Gly
2426 65 70 75 80
2427
2428 AGC GAT CCG ATT ATC TAC CGG GAG CCC CTG CAG ACC GAG CAG TAC GAT
2429 288
2430 Ser Asp Pro Ile Ile Tyr Arg Glu Pro Leu Gln Thr Glu Gln Tyr Asp
2431 85 90 95
2432
2433 AGC CTA AGT CTC AAC GCA CCG AAC TTT GTG AGC TCA TTT ACG CAG GGC
2434 336
2435 Ser Leu Ser Leu Asn Ala Pro Asn Phe Val Ser Ser Phe Thr Gln Gly
2436 100 105 110
2437
2438 GAC TTT GTC TAT TTC TTT CGG GAA ACC GCC GTT GAG TTT ATC AAC
2439 384
2440 Asp Phe Val Tyr Phe Phe Arg Glu Thr Ala Val Glu Phe Ile Asn
2441 115 120 125
2442
2443 TGT GGC AAG GCG ATT TAT TCG CGC GTT GCC CGC GTC TGC AAA TGG GAC
2444 432
2445 Cys Gly Lys Ala Ile Tyr Ser Arg Val Ala Arg Val Cys Lys Trp Asp
2446 130 135 140
2447
2448 AAA GGT GGC CCG CAT CGA TTC CGC AAC CGC TGG ACA TCC TTC CTC AAG

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:29**INPUT SET: S7086.raw**

2449 480
2450 Lys Gly Gly Pro His Arg Phe Arg Asn Arg Trp Thr Ser Phe Leu Lys
2451 145 150 155 160
2452
2453 TCC CGC CTC AAC TGC TCC ATT CCC GGC GAT TAT CCT TTC TAC TTT AAT
2454 528
2455 Ser Arg Leu Asn Cys Ser Ile Pro Gly Asp Tyr Pro Phe Tyr Phe Asn
2456 165 170 175
2457
2458 GAA ATC CAA TCT GCC AGC AAT CTG GTG GAG GGA CAG TAT GGC TCG ATG
2459 576
2460 Glu Ile Gln Ser Ala Ser Asn Leu Val Glu Gly Gln Tyr Gly Ser Met
2461 180 185 190
2462
2463 AGC TCG AAA CTG ATC TAC GGA GTC TTC AAC ACG CCG AGC AAC TCA ATT
2464 624
2465 Ser Ser Lys Leu Ile Tyr Gly Val Phe Asn Thr Pro Ser Asn Ser Ile
2466 195 200 205
2467
2468 CCC GGC TCA GCG GTT TGT GCC TTT GCC CTC CAG GAC ATT GCC GAT ACG
2469 672
2470 Pro Gly Ser Ala Val Cys Ala Phe Ala Leu Gln Asp Ile Ala Asp Thr
2471 210 215 220
2472
2473 TTT GAG GGT CAG TTC AAG GAG CAG ACT GGC ATC AAC TCC AAC TGG CTG
2474 720
2475 Phe Glu Gly Gln Phe Lys Glu Gln Thr Gly Ile Asn Ser Asn Trp Leu
2476 225 230 235 240
2477
2478 CCA GTG AAC AAC GCC AAG GTA CCC GAT CCT CGA CCC GGT TCC TGT CAC
2479 768
2480 Pro Val Asn Asn Ala Lys Val Pro Asp Pro Arg Pro Gly Ser Cys His
2481 245 250 255
2482
2483 AAC GAT TCG AGA GCG CTT CCG GAT CCC ACA CTG AAC TTC ATC AAA ACA
2484 816
2485 Asn Asp Ser Arg Ala Leu Pro Asp Pro Thr Leu Asn Phe Ile Lys Thr
2486 260 265 270
2487
2488 CAT TCG CTA ATG GAC GAG AAT GTG CCG GCA TTT TTC AGT CAA CCG ATT
2489 864
2490 His Ser Leu Met Asp Glu Asn Val Pro Ala Phe Phe Ser Gln Pro Ile
2491 275 280 285
2492
2493 TTG GTC CGG ACG AGC ACA ATA TAC CGC TTC ACT CAA ATC GTC GAA GAT
2494 912
2495 Leu Val Arg Thr Ser Thr Ile Tyr Arg Phe Thr Gln Ile Ala Val Asp
2496 290 295 300
2497
2498 GCG CAG ATT AAA ACT CCT GGC GGC AAG ACA TAT GAT GTT ATC TTT GTG
2499 960

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:36**INPUT SET: S7086.raw**

2500 Ala Gln Ile Lys Thr Pro Gly Gly Lys Thr Tyr Asp Val Ile Phe Val
2501 305 310 315 320
2502
2503 GGC ACA GAT CAT GGA AAG ATT ATT AAG TCA GTG AAT GCT GAA TCT GCC
2504 1008
2505 Gly Thr Asp His Gly Lys Ile Ile Lys Ser Val Asn Ala Glu Ser Ala
2506 325 330 335
2507
2508 GAT TCA GCG GAT AAA GTC ACC TCC GTA GTC ATC GAG GAG ATC GAT GTC
2509 1056
2510 Asp Ser Ala Asp Lys Val Thr Ser Val Val Ile Glu Glu Ile Asp Val
2511 340 345 350
2512
2513 CTG ACC AAG AGT GAA CCC ATA CGC AAT CTG GAG ATA GTC AGA ACC ATG
2514 1104
2515 Leu Thr Lys Ser Glu Pro Ile Arg Asn Leu Glu Ile Val Arg Thr Met
2516 355 360 365
2517
2518 CAG TAC GAT CAA CCC AAA GAT GGC AGC TAC GAC GAT GGT AAA TTA ATC
2519 1152
2520 Gln Tyr Asp Gln Pro Lys Asp Gly Ser Tyr Asp Asp Gly Lys Leu Ile
2521 370 375 380
2522
2523 ATT GTG ACG GAC AGT CAG GTG GTA GCC ATA CAA TTG CAT CGT TGT CAC
2524 1200
2525 Ile Val Thr Asp Ser Gln Val Val Ala Ile Gln Leu His Arg Cys His
2526 385 390 395 400
2527
2528 AAT GAC AAA ATC ACC AGC TGC AGC GAG TGC GTC GCA TTG CAG GAT CCG
2529 1248
2530 Asn Asp Lys Ile Thr Ser Cys Ser Glu Cys Val Ala Leu Gln Asp Pro
2531 405 410 415
2532
2533 TAC TGC GCC TGG GAC AAA ATC GCT GGC AAG TGC CGT TCC CAC GGC GCT
2534 1296
2535 Tyr Cys Ala Trp Asp Lys Ile Ala Gly Lys Cys Arg Ser His Gly Ala
2536 420 425 430
2537
2538 CCC CGA TGG CTA GAG GAG AAC TAT TTC TAC CAG AAT GTG GCC ACT GGC
2539 1344
2540 Pro Arg Trp Leu Glu Glu Asn Tyr Phe Tyr Gln Asn Val Ala Thr Gly
2541 435 440 445
2542
2543 CAG CAT GCG GCC TGC CCC TCA GGC AAA ATC AAT TCA AAG GAT GCC AAC
2544 1392
2545 Gln His Ala Ala Cys Pro Ser Gly Lys Ile Asn Ser Lys Asp Ala Asn
2546 450 455 460
2547
2548 GCT GGG GAG CAG AAG GGC TTC CGC AAC GAC ATG GAC TTA TTG GAT TCG
2549 1440
2550 Ala Gly Glu Gln Lys Gly Phe Arg Asn Asp Met Asp Leu Leu Asp Ser

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:42**INPUT SET: S7086.raw**

2551	465	470	475	480
2552				
2553	CGA CGC CAG AGC AAG GAT CAG GAA ATA ATC GAC AAT ATT GAT AAG AAC			
2554	1488			
2555	Arg Arg Gln Ser Lys Asp Gln Glu Ile Ile Asp Asn Ile Asp Lys Asn			
2556	485	490	495	
2557				
2558	TTT GAA GAT ATA ATC AAC GCC CAG TAC ACT GTG GAG ACC CTC GTG ATG			
2559	1536			
2560	Phe Glu Asp Ile Ile Asn Ala Gln Tyr Thr Val Glu Thr Leu Val Met			
2561	500	505	510	
2562				
2563	GCC GTT CTG GCC GGT TCG ATC TTT TCG CTG CTG GTC GGC TTC TTT ACA			
2564	1584			
2565	Ala Val Leu Ala Gly Ser Ile Phe Ser Leu Leu Val Gly Phe Phe Thr			
2566	515	520	525	
2567				
2568	GGC TAC TTC TGC GGT CGC CGT TGT CAC AAG GAC GAG GAT GAT AAT CTG			
2569	1632			
2570	Gly Tyr Phe Cys Gly Arg Arg Cys His Lys Asp Glu Asp Asp Asn Leu			
2571	530	535	540	
2572				
2573	CCG TAT CCG GAT ACG GAG TAC GAG TAC TTC GAG CAG CGA CAG AAT GTC			
2574	1680			
2575	Pro Tyr Pro Asp Thr Glu Tyr Glu Tyr Phe Glu Gln Arg Gln Asn Val			
2576	545	550	555	560
2577				
2578	AAT AGC TTC CCC TCG TCC TGT CGC ATC CAG CAG GAG CCC AAG CTG CTG			
2579	1728			
2580	Asn Ser Phe Pro Ser Ser Cys Arg Ile Gln Gln Glu Pro Lys Leu Leu			
2581	565	570	575	
2582				
2583	CCC CAA GTG GAG GAG GTG ACG TAT GCG GAC GCA GTG CTC CTG CCA CAG			
2584	1776			
2585	Pro Gln Val Glu Glu Val Thr Tyr Ala Asp Ala Val Leu Leu Pro Gln			
2586	580	585	590	
2587				
2588	CCT CCG CCG CCC AAT AAG ATG CAC TCG CCG AAG AAC ACG CTG CGT AAG			
2589	1824			
2590	Pro Pro Pro Asn Lys Met His Ser Pro Lys Asn Thr Leu Arg Lys			
2591	595	600	605	
2592				
2593	CCC CCG ATG CAC CAG ATG CAC CAG GGT CCC AAC TCG GAG ACC CTC TTC			
2594	1872			
2595	Pro Pro Met His Gln Met His Gln Gly Pro Asn Ser Glu Thr Leu Phe			
2596	610	615	620	
2597				
2598	CAG TTC CAC GTG ACG GCT ACA ACA CCC AGC AGT CGT ATC GTG GTC GCG			
2599	1920			
2600	Gln Phe His Val Thr Ala Thr Thr Pro Ser Ser Arg Ile Val Val Ala			
2601	625	630	635	640

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:49**INPUT SET: S7086.raw**

2602 ACA ACT TCG GAA CAC TGC GTT CCC ACC AGG TGATGGCGA CAATTACAGG
2603 1970
2604 Thr Thr Ser Glu His Cys Val Pro Thr Arg
2605 645 650
2606
2607 CGCGCGATG GCTTTCCAC CACCCGCAGC GTCAAGAAGG TTTACCTTG AGACGGGAGT
2608 2030
2609
2610 GGGGCGGCTG AAACCAGTCA GGGACTAATT ACCCAAAATA TGGCTGTAAA CAACACAAAC
2611 2090
2612
2613 ACACGTAACA GAAGTCCTGG TCGCGCAAGA AGACAGCCGC CCCGTCATGG CATTGTAACT
2614 2150
2615
2616 CAACACCGCT CGAATAGCCC CCAGCAGCAG CAGCAGCAGT CGCAGCAGCC GCACTCCAGT
2617 2210
2618
2619 TCGGGCTCCT CGCCCGTAAT GTCCAACAGC AGCAGCAGTC CGGCTCCGCC CTCCAGCAGT
2620 2270
2621
2622 CCCAGTCCGC AGGAGAGCCC CAAGAACTGC AGCTACATCT ACCGTGATTG ATTGATATGC
2623 2330
2624
2625 AACACCAAAT CGATGCCACT CATCCAGGCC CAGTCCACGC ACGCCAGCC ACACTCACAC
2626 2390
2627
2628 CCGCACCCGC ACCCGCTTCC GCCACCCGGT CCGACCACGC CCCCAGCACA GCCACGCGCC
2629 2450
2630
2631 AGAAGTCAA TGATCGGCAG GACATATGCC AAGTCCATGC CCGTGACACC AGTTCAACCG
2632 2510
2633
2634 CAATCGCCGC TGGCTGAGAC GCCCTCCTAT GAGCTCTACG AACGCCACTC GGATGCGGCC
2635 2570
2636
2637 ACCTTCCACT TTGGGGATGA GGACGATGAC GATGATGATG AGCACGACCA GGAGGACACC
2638 2630
2639
2640 TCATCGCTGG CCATGATCAC ACCGCCGCCG CCCTACGACA CTCCGCATCT GATTGCATCG
2641 2690
2642
2643 CCACCGCTGC CGCCGCCTCG TAGATTCGC TTTGGCAACA GGGAGCTGTT CAGCATGAGT
2644 2750
2645
2646 CCAGCCGGAG GTGGAACCAC GCCCACCGCC TCGGCAGGCC AACGCCAG CAGGCCATC
2647 2810
2648
2649 ACGCCCCACAA AGTTGAGTGC GGCGGCAGCG GCCATGTTG CCGCACCCCCA AATGGCCACC
2650 2870
2651
2652

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:28:55**INPUT SET: S7086.raw**

2653 CAACTCAACC GGAAGTGGGC TCATTTGCAA AGGAAGCGGC GCAGGCGCAA CAGCAGCTCC
2654 2930
2655
2656 GGCGATTCTA AGGAGCTCGA CAAACTGGTC CTGCAATCGG TCGACTGGGA TGAGAATGAG
2657 2990
2658
2659 ATGTACTAGA ACGCAAACCA ACAATGAGAT AGCAGAAACA CTTTGATTG GAATTTATAC
2660 3050
2661
2662 ACCTTTGCAT ATTTTGAATA TGACTTCAAT TTTAAAATGC GTAATTATGT TCTTATTTTT
2663 3110
2664
2665 TAAAGAACGC TTTAGAGAAG TTTTCTGCTA CCTTAAATAG TACACACAAC TCATATCTAA
2666 3170
2667
2668 CGTGGCGCTG CGATATAGGA ATAACCACTC CCCCTCCCT TAAACTTAAA GTAGCAATCG
2669 3230
2670
2671 AAAAGATCAT TCATTAGCGA CAGAAACTGG ATGGGGATTT ACTTACACAC AAAAAGCCAG
2672 3290
2673
2674 AGAAGTTATA CACGAAGTTT ATAGTTATAT AGCCTTTATA CATACTCCCC GATCTGCTAA
2675 3350
2676
2677 GTATACACAA GCAAGCATAA CATAACATAC GTATATATGA CTCTATATAT ACCAATAGAT
2678 3410
2679
2680 TTCATAGACG ATTACACATGG ATCGGCTACG CTAAATTAGA GCTGAAAAT GATATTGTTA
2681 3470
2682
2683 ATTACGATTA GAGAAAAAAA AAAAGGAATT CGATATCAAG CKTATCGATA CCNTCGACCT
2684 3530
2685
2686 CGNNNNNGGG GCCCGGTACC CAATCGCCC
2687 3560
2688
2689
2690 (2) INFORMATION FOR SEQ ID NO:60:
2691
2692 (i) SEQUENCE CHARACTERISTICS:
2693 (A) LENGTH: 650 amino acids
2694 (B) TYPE: amino acid
2695 (D) TOPOLOGY: linear
2696
2697 (ii) MOLECULE TYPE: protein
2698
2699 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:
2700
2701 Glu Asp Asp Cys Gln Asn Tyr Ile Arg Ile Met Val Val Pro Ser Pro
2702 1 5 10 15
2703

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:02**INPUT SET: S7086.raw**

2704 Gly Arg Leu Phe Val Cys Gly Thr Asn Ser Phe Arg Pro Met Cys Asn
2705 20 25 30
2706
2707 Thr Tyr Ile Ile Ser Asp Ser Asn Tyr Thr Leu Glu Ala Thr Lys Asn
2708 35 40 45
2709
2710 Gly Gln Ala Val Cys Pro Tyr Asp Pro Arg His Asn Ser Thr Ser Val
2711 50 55 60
2712
2713 Leu Ala Asp Asn Glu Leu Tyr Ser Gly Thr Val Ala Asp Phe Ser Gly
2714 65 70 75 80
2715
2716 Ser Asp Pro Ile Ile Tyr Arg Glu Pro Leu Gln Thr Glu Gln Tyr Asp
2717 85 90 95
2718
2719 Ser Leu Ser Leu Asn Ala Pro Asn Phe Val Ser Ser Phe Thr Gln Gly
2720 100 105 110
2721
2722 Asp Phe Val Tyr Phe Phe Arg Glu Thr Ala Val Glu Phe Ile Asn
2723 115 120 125
2724
2725 Cys Gly Lys Ala Ile Tyr Ser Arg Val Ala Arg Val Cys Lys Trp Asp
2726 130 135 140
2727
2728 Lys Gly Gly Pro His Arg Phe Arg Asn Arg Trp Thr Ser Phe Leu Lys
2729 145 150 155 160
2730
2731 Ser Arg Leu Asn Cys Ser Ile Pro Gly Asp Tyr Pro Phe Tyr Phe Asn
2732 165 170 175
2733
2734 Glu Ile Gln Ser Ala Ser Asn Leu Val Glu Gly Gln Tyr Gly Ser Met
2735 180 185 190
2736
2737 Ser Ser Lys Leu Ile Tyr Gly Val Phe Asn Thr Pro Ser Asn Ser Ile
2738 195 200 205
2739
2740 Pro Gly Ser Ala Val Cys Ala Phe Ala Leu Gln Asp Ile Ala Asp Thr
2741 210 215 220
2742
2743 Phe Glu Gly Gln Phe Lys Glu Gln Thr Gly Ile Asn Ser Asn Trp Leu
2744 225 230 235 240
2745
2746 Pro Val Asn Asn Ala Lys Val Pro Asp Pro Arg Pro Gly Ser Cys His
2747 245 250 255
2748
2749 Asn Asp Ser Arg Ala Leu Pro Asp Pro Thr Leu Asn Phe Ile Lys Thr
2750 260 265 270
2751
2752 His Ser Leu Met Asp Glu Asn Val Pro Ala Phe Phe Ser Gln Pro Ile
2753 275 280 285
2754

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:08**INPUT SET: S7086.raw**

2755 Leu Val Arg Thr Ser Thr Ile Tyr Arg Phe Thr Gln Ile Ala Val Asp
2756 290 295 300
2757
2758 Ala Gln Ile Lys Thr Pro Gly Gly Lys Thr Tyr Asp Val Ile Phe Val
2759 305 310 315 320
2760
2761 Gly Thr Asp His Gly Lys Ile Ile Lys Ser Val Asn Ala Glu Ser Ala
2762 325 330 335
2763
2764 Asp Ser Ala Asp Lys Val Thr Ser Val Val Ile Glu Glu Ile Asp Val
2765 340 345 350
2766
2767 Leu Thr Lys Ser Glu Pro Ile Arg Asn Leu Glu Ile Val Arg Thr Met
2768 355 360 365
2769
2770 Gln Tyr Asp Gln Pro Lys Asp Gly Ser Tyr Asp Asp Gly Lys Leu Ile
2771 370 375 380
2772
2773 Ile Val Thr Asp Ser Gln Val Val Ala Ile Gln Leu His Arg Cys His
2774 385 390 395 400
2775
2776 Asn Asp Lys Ile Thr Ser Cys Ser Glu Cys Val Ala Leu Gln Asp Pro
2777 405 410 415
2778
2779 Tyr Cys Ala Trp Asp Lys Ile Ala Gly Lys Cys Arg Ser His Gly Ala
2780 420 425 430
2781
2782 Pro Arg Trp Leu Glu Glu Asn Tyr Phe Tyr Gln Asn Val Ala Thr Gly
2783 435 440 445
2784
2785 Gln His Ala Ala Cys Pro Ser Gly Lys Ile Asn Ser Lys Asp Ala Asn
2786 450 455 460
2787
2788 Ala Gly Glu Gln Lys Gly Phe Arg Asn Asp Met Asp Leu Leu Asp Ser
2789 465 470 475 480
2790
2791 Arg Arg Gln Ser Lys Asp Gln Glu Ile Ile Asp Asn Ile Asp Lys Asn
2792 485 490 495
2793
2794 Phe Glu Asp Ile Ile Asn Ala Gln Tyr Thr Val Glu Thr Leu Val Met
2795 500 505 510
2796
2797 Ala Val Leu Ala Gly Ser Ile Phe Ser Leu Leu Val Gly Phe Phe Thr
2798 515 520 525
2799
2800 Gly Tyr Phe Cys Gly Arg Arg Cys His Lys Asp Glu Asp Asp Asn Leu
2801 530 535 540
2802
2803 Pro Tyr Pro Asp Thr Glu Tyr Glu Tyr Phe Glu Gln Arg Gln Asn Val
2804 545 550 555 560
2805

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:15**INPUT SET: S7086.raw**

2806 Asn Ser Phe Pro Ser Ser Cys Arg Ile Gln Gln Glu Pro Lys Leu Leu
2807 565 570 575
2808
2809 Pro Gln Val Glu Glu Val Thr Tyr Ala Asp Ala Val Leu Leu Pro Gln
2810 580 585 590
2811
2812 Pro Pro Pro Asn Lys Met His Ser Pro Lys Asn Thr Leu Arg Lys
2813 595 600 605
2814
2815 Pro Pro Met His Gln Met His Gln Gly Pro Asn Ser Glu Thr Leu Phe
2816 610 615 620
2817
2818 Gln Phe His Val Thr Ala Thr Thr Pro Ser Ser Arg Ile Val Val Ala
2819 625 630 635 640
2820
2821 Thr Thr Ser Glu His Cys Val Pro Thr Arg
2822 645 650
2823
2824
2825 (2) INFORMATION FOR SEQ ID NO:61:
2826
2827 (i) SEQUENCE CHARACTERISTICS:
--> 2828 (A) LENGTH: 2670 base pairs
2829 (B) TYPE: nucleic acid
2830 (C) STRANDEDNESS: double
2831 (D) TOPOLOGY: linear
2832
2833 (ii) MOLECULE TYPE: cDNA
2834
2835
2836 (ix) FEATURE:
2837 (A) NAME/KEY: CDS
2838 (B) LOCATION: 268..2439
2839
2840
2841 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:
2842
2843 GAAAATCGAA CWCCGAATTG AATGAACWGC AAAACGCCAA TTAGATAGTT GCAAGCCTAA
2844 60
2845
2846 TGCATTCAG AKATTTNMMC GATGCGAAC AAGTTCCGCC ACGAAAGTGA ACAGTGGTAA
2847 120
2848
2849 AATGCCAAG AATCTCGAGC GGAAACACCA AACACAAAAG AACAAAGCAAC CGCCTCTCAC
2850 180
2851
2852 TCGCTCTGCACTTTAATCC AATTGAGGTT GGTGGGGTCG CATTCGCCCG CCGGTCGACC
2853 240
2854
2855 ACCCCCTCTCG CTCGCACCGC CCTCGCA ATG TCT CTT CTA CAG CTA TCG CCG CTC
2856 294

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:22**INPUT SET: S7086.raw**

2857 Met Ser Leu Leu Gln Leu Ser Pro Leu
2858 1 5
2859 CTC GCA CTC CTG CTA CTC CTC TGC AGT AGT GTG AGC GAG ACG GCT GCG
2860 342
2861 Leu Ala Leu Leu Leu Leu Cys Ser Ser Val Ser Glu Thr Ala Ala
2862 10 15 20 25
2863
2864 GAC TAC GAG AAC ACC TGG AAC TTC TAC TAC GAG CGT CCC TGT TGC ACT
2865 390
2866 Asp Tyr Glu Asn Thr Trp Asn Phe Tyr Tyr Glu Arg Pro Cys Cys Thr
2867 30 35 40
2868
2869 GGA AAC GAT CAG GGG AAC AAC AAT TAC GGA AAA CAC GGC GCA GAT CAT
2870 438
2871 Gly Asn Asp Gln Gly Asn Asn Asn Tyr Gly Lys His Gly Ala Asp His
2872 45 50 55
2873
2874 GTG CGG GAG TTC AAC TGC GGC AAG CTG TAC TAT CGT ACA TTC CAT ATG
2875 486
2876 Val Arg Glu Phe Asn Cys Gly Lys Leu Tyr Tyr Arg Thr Phe His Met
2877 60 65 70
2878
2879 AAC GAA GAT CGA GAT ACG CTC TAT GTG GGA GCC ATG GAT CGC GTA TTC
2880 534
2881 Asn Glu Asp Arg Asp Thr Leu Tyr Val Gly Ala Met Asp Arg Val Phe
2882 75 80 85
2883
2884 CGT GTG AAC CTG CAG AAT ATC TCC TCA TCC AAT TGT AAT CGG GAT GCG
2885 582
2886 Arg Val Asn Leu Gln Asn Ile Ser Ser Asn Cys Asn Arg Asp Ala
2887 90 95 100 105
2888
2889 ATC AAC TTG GAG CCA ACA CGG GAT GAT GTG GTT AGC TGC GTC TCC AAA
2890 630
2891 Ile Asn Leu Glu Pro Thr Arg Asp Asp Val Val Ser Cys Val Ser Lys
2892 110 115 120
2893
2894 GGC AAA AGT CAG ATC TTC GAC TGC AAG AAC CAT GTG CGT GTC ATC CAG
2895 678
2896 Gly Lys Ser Gln Ile Phe Asp Cys Lys Asn His Val Arg Val Ile Gln
2897 125 130 135
2898
2899 TCA ATG GAC CAG GGG GAT AGG CTC TAT GTA TGC GGC ACC AAC GCC CAC
2900 726
2901 Ser Met Asp Gln Gly Asp Arg Leu Tyr Val Cys Gly Thr Asn Ala His
2902 140 145 150
2903
2904 AAT CCC AAG GAT TAT GTT ATC TAT GCG AAT CTA ACC CAC CAC CTG CCG CGC
2905 774
2906 Asn Pro Lys Asp Tyr Val Ile Tyr Ala Asn Leu Thr His Leu Pro Arg
2907 155 160 165

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:29**INPUT SET: S7086.raw**

2908
2909 TCG GAA TAT GTG ATT GGC GTG GGT CTG GGC ATT GCC AAG TGC CCC TAC
2910 822
2911 Ser Glu Tyr Val Ile Gly Val Gly Leu Gly Ile Ala Lys Cys Pro Tyr
2912 170 175 180 185
2913
2914 GAT CCC CTC GAC AAC TCA ACT GCG ATT TAT GTG GAG AAT GGC AAT CCG
2915 870
2916 Asp Pro Leu Asp Asn Ser Thr Ala Ile Tyr Val Glu Asn Gly Asn Pro
2917 190 195 200
2918
2919 GGT GGT CTG CCC GGT TTG TAC TCC GGC ACC AAT GCG GAG TTC ACC AAG
2920 918
2921 Gly Gly Leu Pro Gly Leu Tyr Ser Gly Thr Asn Ala Glu Phe Thr Lys
2922 205 210 215
2923
2924 GCG GAT ACG GTT ATT TTC CGC ACT GAT CTG TAT AAT ACT TCG GCT AAA
2925 966
2926 Ala Asp Thr Val Ile Phe Arg Thr Asp Leu Tyr Asn Thr Ser Ala Lys
2927 220 225 230
2928
2929 CGT TTG GAA TAT AAA TTC AAG AGG ACT CTG AAA TAC GAC TCC AAG TGG
2930 1014
2931 Arg Leu Glu Tyr Lys Phe Lys Arg Thr Leu Lys Tyr Asp Ser Lys Trp
2932
2933 235 240 245
2934
2935 TTG GAC AAA CCA AAC TTT GTC GGC TCC TTT GAT ATT GGG GAG TAC GTG
2936 1062
2937 Leu Asp Lys Pro Asn Phe Val Gly Ser Phe Asp Ile Gly Glu Tyr Val
2938 250 255 260 265
2939
2940 TAT TTC TTT TTC CGT GAA ACC GCC GTG GAA TAC ATC AAC TGC GGC AAG
2941 1110
2942 Tyr Phe Phe Phe Arg Glu Thr Ala Val Glu Tyr Ile Asn Cys Gly Lys
2943 270 275 280
2944
2945 GCT GTC TAT TCG CGC ATC GCA CGG GTG TGC AAG AAG GAT GTG GGT GGA
2946 1158
2947 Ala Val Tyr Ser Arg Ile Ala Arg Val Cys Lys Lys Asp Val Gly Gly
2948 285 290 295
2949
2950 AAG AAT CTG CTG GCC CAC AAC TGG GCC ACC TAC CTG AAG GCC AGA CTC
2951 1206
2952 Lys Asn Leu Leu Ala His Asn Trp Ala Thr Tyr Leu Lys Ala Arg Leu
2953 300 305 310
2954
2955 AAC TGC AGC ATC TCC GGC GAA TTT CCG TTC TAT TTC AAC GAG ATC CAA
2956 1254
2957 Asn Cys Ser Ile Ser Gly Glu Phe Pro Phe Tyr Phe Asn Glu Ile Gln
2958 315 320 325

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:36**INPUT SET: S7086.raw**

2959
2960 TCG GTC TAC CAG CTG CCC TCC GAT AAG AGT CGA TTC TTC GCC ACA TTC
2961 1302
2962 Ser Val Tyr Gln Leu Pro Ser Asp Lys Ser Arg Phe Phe Ala Thr Phe
2963 330 335 340 345
2964
2965 ACG ACG AGC ACT AAT GGC CTG ATT GGA TCT GCC GTA TGC AGT TTC CAC
2966 1350
2967 Thr Thr Ser Thr Asn Gly Leu Ile Gly Ser Ala Val Cys Ser Phe His
2968 350 355 360
2969
2970 ATT AAC GAG ATT CAG GCT GCC TTC AAT GGC AAA TTC AAG GAG CAA TCT
2971 1398
2972 Ile Asn Glu Ile Gln Ala Ala Phe Asn Gly Lys Phe Lys Glu Gln Ser
2973 365 370 375
2974
2975 TCA TCG AAT TCC GCA TGG CTG CCG GTG CTT AAC TCC CGG GTG CCG GAA
2976 1446
2977 Ser Ser Asn Ser Ala Trp Leu Pro Val Leu Asn Ser Arg Val Pro Glu
2978 380 385 390
2979
2980 CCA CGG CCG GGT ACA TGT GTC AAC GAT ACA TCA AAC CTG CCC GAT ACC
2981 1494
2982 Pro Arg Pro Gly Thr Cys Val Asn Asp Thr Ser Asn Leu Pro Asp Thr
2983 395 400 405
2984
2985 GTA CTG AAT TTC ATC AGA TCC CAT CCA CTT ATG GAC AAA GCC GTA AAT
2986 1542
2987 Val Leu Asn Phe Ile Arg Ser His Pro Leu Met Asp Lys Ala Val Asn
2988 410 415 420 425
2989
2990 CAC GAG CAC AAC AAT CCA GTC TAT TAT AAA AGG GAT TTG GTC TTC ACC
2991 1590
2992 His Glu His Asn Asn Pro Val Tyr Tyr Lys Arg Asp Leu Val Phe Thr
2993 430 435 440
2994
2995 AAG CTC GTC GTT GAC AAA ATT CGC ATT GAC ATC CTC AAC CAG GAA TAC
2996 1638
2997 Lys Leu Val Val Asp Lys Ile Arg Ile Asp Ile Leu Asn Gln Glu Tyr
2998 445 450 455
2999
3000 ATT GTG TAC TAT GTG GGC ACC AAT CTG GGT CGC ATT TAC AAA ATC GTG
3001 1686
3002 Ile Val Tyr Tyr Val Gly Thr Asn Leu Gly Arg Ile Tyr Lys Ile Val
3003 460 465 470
3004
3005 CAG TAC TAC CGT AAC GGA GAG TCG CTG TCC AAG CTT CTG GAT ATC TTC
3006 1734
3007 Gln Tyr Tyr Arg Asn Gly Glu Ser Leu Ser Lys Leu Leu Asp Ile Phe
3008 475 480 485
3009

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:43**INPUT SET: S7086.raw**

3010 GAG GTG GCT CCA AAC GAG GCC ATC CAA GTG ATG GAA ATC AGC CAG ACA
3011 1782
3012 Glu Val Ala Pro Asn Glu Ala Ile Gln Val Met Glu Ile Ser Gln Thr
3013 490 495 500 505
3014
3015 CGT AAG AGC CTC TAC ATT GGC ACC GAT CAT CGC ATC AAG CAA ATC GAC
3016 1830
3017 Arg Lys Ser Leu Tyr Ile Gly Thr Asp His Arg Ile Lys Gln Ile Asp
3018 510 515 520
3019
3020 CTG GCC ATG TGC AAT CGC CGT TAC GAC AAC TGC TTC CGC TGC GTC CGT
3021 1878
3022 Leu Ala Met Cys Asn Arg Arg Tyr Asp Asn Cys Phe Arg Cys Val Arg
3023 525 530 535
3024
3025 GAT CCC TAC TGC GGC TGG GAT AAG GAG GCC AAT ACG TGC CGA CCG TAC
3026 1926
3027 Asp Pro Tyr Cys Gly Trp Asp Lys Glu Ala Asn Thr Cys Arg Pro Tyr
3028 540 545 550
3029
3030 GAG CTG GAT TTA CTG CAG GAT GTG GCC AAT GAA ACG AGT GAC ATT TGC
3031 1974
3032 Glu Leu Asp Leu Leu Gln Asp Val Ala Asn Glu Thr Ser Asp Ile Cys
3033 555 560 565
3034
3035 GAT TCG AGT GTG CTG AAA AAG AAG ATT GTG GTG ACC TAT GGC CAG AGT
3036 2028
3037 Asp Ser Ser Val Leu Lys Lys Ile Val Val Thr Tyr Gly Gln Ser
3038 570 575 580 585
3039
3040 GTA CAT CTG GGC TGT TTC GTC AAA ATA CCC GAA GTG CTG AAG AAT GAG
3041 2070
3042 Val His Leu Gly Cys Phe Val Lys Ile Pro Glu Val Leu Lys Asn Glu
3043 590 595 600
3044
3045 CAA GTG ACC TGG TAT CAT CAC TCC AAG GAC AAG GGA CGC TAC GAG ATT
3046 2118
3047 Gln Val Thr Trp Tyr His His Ser Lys Asp Lys Gly Arg Tyr Glu Ile
3048 605 610 615
3049
3050 CGT TAC TCG CCG ACC AAA TAC ATT GAG ACC ACC GAA CGT GGC CTG GTT
3051 2166
3052 Arg Tyr Ser Pro Thr Lys Tyr Ile Glu Thr Thr Glu Arg Gly Leu Val
3053 620 625 630
3054
3055 GTG GTT TCC GTG AAC GAA GCC GAT GGT GGT CGG TAC GAT TGC CAT TTG
3056 2214
3057 Val Val Ser Val Asn Glu Ala Asp Gly Gly Arg Tyr Asp Cys His Leu
3058 635 640 645
3059
3060 GGC GGC TCG CTT TTG TGC AGC TAC AAC ATT ACA GTG GAT GCC CAC AGA

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713DATE: 12/17/93
TIME: 19:29:50

INPUT SET: S7086.raw

3061 2262
3062 Gly Gly Ser Leu Leu Cys Ser Tyr Asn Ile Thr Val Asp Ala His Arg
3063 650 655 660 665
3064
3065 TGC ACT CCG CCG AAC AAG AGT AAT GAC TAT CAG AAA ATC TAC TCG GAC
3066 2310
3067 Cys Thr Pro Pro Asn Lys Ser Asn Asp Tyr Gln Lys Ile Tyr Ser Asp
3068 670 675 680
3069
3070 TGG TGC CAC GAG TTC GAG AAA TAC AAA ACA GCA ATG AAG TCC TGG GAA
3071 2358
3072 Trp Cys His Glu Phe Glu Lys Tyr Lys Thr Ala Met Lys Ser Trp Glu
3073 685 690 695
3074
3075 AAG AAG CAA GGC CAA TGC TCG ACA CGG CAG AAC TTC AGC TGC AAT CAG
3076 2406
3077 Lys Lys Gln Gly Gln Cys Ser Thr Arg Gln Asn Phe Ser Cys Asn Gln
3078 700 705 710
3079
3080 CAT CCG AAT GAG ATT TTC CGT AAG CCC AAT GTC TGATATCACG AAGAGAGTAT
3081 2459
3082 His Pro Asn Glu Ile Phe Arg Lys Pro Asn Val
3083 715 720
3084
3085 CGCCCTCAAA ATGCCGTCA CGTCGTCCAA TCAATTAG TTAATCGAAA GCGAAGAGGA
3086 2519
3087
3088 TAATAACAGT GCGGAATAGA AAGCCCAGGA CGAGAAGAAC TCATTATAAT CATTATTATC
3089 2579
3090
3091 AGCGACATCA TCATAGACAT ACTTTCTTCA GCAATGAACA GAAAATCTT CCTAAAGGAT
3092 2636
3093
3094 TATGCATTTA CCGAAGCATT TACAATGCAT C
3095 2670
3096
3097
3098 (2) INFORMATION FOR SEQ ID NO:62:
3099
3100 (i) SEQUENCE CHARACTERISTICS:
3101 (A) LENGTH: 724 amino acids
3102 (B) TYPE: amino acid
3103 (D) TOPOLOGY: linear
3104
3105 (ii) MOLECULE TYPE: protein
3106
3107 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:
3108
3109 Met Ser Leu Leu Gln Leu Ser Pro Leu Leu Ala Leu Leu Leu Leu
3110 1 5 10 15
3111

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:29:57**INPUT SET: S7086.raw**

3112 Cys Ser Ser Val Ser Glu Thr Ala Ala Asp Tyr Glu Asn Thr Trp Asn
3113 20 25 30
3114
3115 Phe Tyr Tyr Glu Arg Pro Cys Cys Thr Gly Asn Asp Gln Gly Asn Asn
3116 35 40 45
3117
3118 Asn Tyr Gly Lys His Gly Ala Asp His Val Arg Glu Phe Asn Cys Gly
3119 50 55 60
3120
3121 Lys Leu Tyr Tyr Arg Thr Phe His Met Asn Glu Asp Arg Asp Thr Leu
3122 65 70 75 80
3123
3124 Tyr Val Gly Ala Met Asp Arg Val Phe Arg Val Asn Leu Gln Asn Ile
3125 85 90 95
3126
3127 Ser Ser Ser Asn Cys Asn Arg Asp Ala Ile Asn Leu Glu Pro Thr Arg
3128 100 105 110
3129
3130 Asp Asp Val Val Ser Cys Val Ser Lys Gly Lys Ser Gln Ile Phe Asp
3131 115 120 125
3132
3133 Cys Lys Asn His Val Arg Val Ile Gln Ser Met Asp Gln Gly Asp Arg
3134 130 135 140
3135
3136 Leu Tyr Val Cys Gly Thr Asn Ala His Asn Pro Lys Asp Tyr Val Ile
3137 145 150 155 160
3138
3139 Tyr Ala Asn Leu Thr His Leu Pro Arg Ser Glu Tyr Val Ile Gly Val
3140 165 170 175
3141
3142 Gly Leu Gly Ile Ala Lys Cys Pro Tyr Asp Pro Leu Asp Asn Ser Thr
3143 180 185 190
3144
3145 Ala Ile Tyr Val Glu Asn Gly Asn Pro Gly Gly Leu Pro Gly Leu Tyr
3146 195 200 205
3147
3148 Ser Gly Thr Asn Ala Glu Phe Thr Lys Ala Asp Thr Val Ile Phe Arg
3149 210 215 220
3150
3151 Thr Asp Leu Tyr Asn Thr Ser Ala Lys Arg Leu Glu Tyr Lys Phe Lys
3152 225 230 235 240
3153
3154 Arg Thr Leu Lys Tyr Asp Ser Lys Trp Leu Asp Lys Pro Asn Phe Val
3155 245 250 255
3156
3157 Gly Ser Phe Asp Ile Gly Glu Tyr Val Tyr Phe Phe Arg Glu Thr
3158 260 265 270
3159
3160 Ala Val Glu Tyr Ile Asn Cys Gly Lys Ala Val Tyr Ser Arg Ile Ala
3161 275 280 285
3162

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:03**INPUT SET: S7086.raw**

3163 Arg Val Cys Lys Lys Asp Val Gly Gly Lys Asn Leu Leu Ala His Asn
3164 290 295 300
3165
3166 Trp Ala Thr Tyr Leu Lys Ala Arg Leu Asn Cys Ser Ile Ser Gly Glu
3167 305 310 315 320
3168
3169 Phe Pro Phe Tyr Phe Asn Glu Ile Gln Ser Val Tyr Gln Leu Pro Ser
3170 325 330 335
3171
3172 Asp Lys Ser Arg Phe Phe Ala Thr Phe Thr Thr Ser Thr Asn Gly Leu
3173 340 345 350
3174
3175 Ile Gly Ser Ala Val Cys Ser Phe His Ile Asn Glu Ile Gln Ala Ala
3176 355 360 365
3177
3178 Phe Asn Gly Lys Phe Lys Glu Gln Ser Ser Ser Asn Ser Ala Trp Leu
3179 370 375 380
3180
3181 Pro Val Leu Asn Ser Arg Val Pro Glu Pro Arg Pro Gly Thr Cys Val
3182 385 390 395 400
3183
3184 Asn Asp Thr Ser Asn Leu Pro Asp Thr Val Leu Asn Phe Ile Arg Ser
3185 405 410 415
3186
3187 His Pro Leu Met Asp Lys Ala Val Asn His Glu His Asn Asn Pro Val
3188 420 425 430
3189
3190 Tyr Tyr Lys Arg Asp Leu Val Phe Thr Lys Leu Val Val Asp Lys Ile
3191 435 440 445
3192
3193 Arg Ile Asp Ile Leu Asn Gln Glu Tyr Ile Val Tyr Tyr Val Gly Thr
3194 450 455 460
3195
3196 Asn Leu Gly Arg Ile Tyr Lys Ile Val Gln Tyr Tyr Arg Asn Gly Glu
3197 465 470 475 480
3198
3199 Ser Leu Ser Lys Leu Leu Asp Ile Phe Glu Val Ala Pro Asn Glu Ala
3200 485 490 495
3201
3202 Ile Gln Val Met Glu Ile Ser Gln Thr Arg Lys Ser Leu Tyr Ile Gly
3203 500 505 510
3204
3205 Thr Asp His Arg Ile Lys Gln Ile Asp Leu Ala Met Cys Asn Arg Arg
3206 515 520 525
3207
3208 Tyr Asp Asn Cys Phe Arg Cys Val Arg Asp Pro Tyr Cys Gly Trp Asp
3209 530 535 540
3210
3211 Lys Glu Ala Asn Thr Cys Arg Pro Tyr Glu Leu Asp Leu Leu Gln Asp
3212 545 550 555 560
3213

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:10**INPUT SET: S7086.raw**

3214 Val Ala Asn Glu Thr Ser Asp Ile Cys Asp Ser Ser Val Leu Lys Lys
3215 565 570 575
3216
3217 Lys Ile Val Val Thr Tyr Gly Gln Ser Val His Leu Gly Cys Phe Val
3218 580 585 590
3219
3220 Lys Ile Pro Glu Val Leu Lys Asn Glu Gln Val Thr Trp Tyr His His
3221 595 600 605
3222
3223 Ser Lys Asp Lys Gly Arg Tyr Glu Ile Arg Tyr Ser Pro Thr Lys Tyr
3224 610 615 620
3225
3226 Ile Glu Thr Thr Glu Arg Gly Leu Val Val Val Ser Val Asn Glu Ala
3227 625 630 635 640
3228
3229 Asp Gly Gly Arg Tyr Asp Cys His Leu Gly Gly Ser Leu Leu Cys Ser
3230 645 650 655
3231
3232 Tyr Asn Ile Thr Val Asp Ala His Arg Cys Thr Pro Pro Asn Lys Ser
3233 660 665 670
3234
3235 Asn Asp Tyr Gln Lys Ile Tyr Ser Asp Trp Cys His Glu Phe Glu Lys
3236 675 680 685
3237
3238 Tyr Lys Thr Ala Met Lys Ser Trp Glu Lys Lys Gln Gly Gln Cys Ser
3239 690 695 700
3240
3241 Thr Arg Gln Asn Phe Ser Cys Asn Gln His Pro Asn Glu Ile Phe Arg
3242 705 710 715 720
3243
3244 Lys Pro Asn Val
3245
3246
3247 (2) INFORMATION FOR SEQ ID NO:63:
3248
3249 (i) SEQUENCE CHARACTERISTICS:
--> 3250 (A) LENGTH: 2504 base pairs
3251 (B) TYPE: nucleic acid
3252 (C) STRANDEDNESS: double
3253 (D) TOPOLOGY: linear
3254
3255 (ii) MOLECULE TYPE: cDNA
3256
3257
3258 (ix) FEATURE:
3259 (A) NAME/KEY: CDS
3260 (B) LOCATION: 355..2493
3261
3262
3263 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:
3264

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:16**INPUT SET: S7086.raw**

3265 GGCCGGTCGA CCACGAGCGA AGTTAGTAT CAAGTTGAGA GTTGTTGG AGCGTAGTTT
3266 60
3267
3268 ACGGAGCGTA CATTAAATT TGCGGACAAA TCGTGTGTTG GTGCTCTCT GTGGATTGTT
3269 120
3270
3271 GTGTTCTTGA AGATGCTTCC CTTGGTTTC GGATAAGCTT TCCTGTGGAT TGTTGTGTTC
3272 180
3273
3274 TTGAAGATGC TTCCCTTGGT TTTGGATAA GCTTCAGC GTGGTTTCAG CCTCGGCTTG
3275 240
3276
3277 TTTGGACCCC GACATAATCT TCGAACTACA ATGAAGAGGA AATTTGAAA CGCGTTTCAG
3278 300
3279
3280 ACGCGTACAA TCGACAAAAT GTTTGGTTTC CAATTGATCT TGCAATGTAG CTAC ATG
3281 357
3282 Met
3283 1
3284
3285 GTG GTG AAG ATC TTG GTT TGG TCG ATA TGT CTG ATA GCG CTG TGT CAT
3286 405
3287 Val Val Lys Ile Leu Val Trp Ser Ile Cys Leu Ile Ala Leu Cys His
3288 5 10 15
3289
3290 GCT TGG ATG CCG GAT AGT TCT TCC AAA TTA ATA AAC CAT TTT AAA TCA
3291 453
3292 Ala Trp Met Pro Asp Ser Ser Lys Leu Ile Asn His Phe Lys Ser
3293 20 25 30
3294
3295 GTT GAA AGT AAA AGC TTT ACC GGG AAC GCC ACG TTC CCT GAT CAC TTT
3296 501
3297 Val Glu Ser Lys Ser Phe Thr Gly Asn Ala Thr Phe Pro Asp His Phe
3298 35 40 45
3299
3300 ATT GTC TTG AAT CAA GAC GAA ACT TCG ATA TTA GTA GGC GGT AGA AAT
3301 549
3302 Ile Val Leu Asn Gln Asp Glu Thr Ser Ile Leu Val Gly Gly Arg Asn
3303 50 55 60 65
3304
3305 AGG GTT TAC AAT TTA AGT ATA TTC GAC CTC AGT GAG CGT AAA GGG GGG
3306 597
3307 Arg Val Tyr Asn Leu Ser Ile Phe Asp Leu Ser Glu Arg Lys Gly Gly
3308 70 75 80
3309
3310 CGA ATC GAC TGG CCA TCG TCC GAT GCA CAT GGC CAG TTG TGT ATA TTG
3311 645
3312 Arg Ile Asp Trp Pro Ser Ser Asp Ala His Gly Gln Leu Cys Ile Leu
3313 85 90 95
3314
3315 AAA GGG AAA ACG GAC GAC TGC CAA AAT TAC ATT AGA ATA CTG TAC

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:23**INPUT SET: S7086.raw**

3316 693
3317 Lys Gly Lys Thr Asp Asp Asp Cys Gln Asn Tyr Ile Arg Ile Leu Tyr
3318 100 105 110
3319
3320 TCT TCA GAA CCG GGG AAA TTA GTT ATT TGC GGG ACC AAT TCG TAC AAA
3321 741
3322 Ser Ser Glu Pro Gly Lys Leu Val Ile Cys Gly Thr Asn Ser Tyr Lys
3323 115 120 125
3324
3325 CCC CTC TGT CGG ACG TAC GCA TTT AAG GAG GGA AAG TAC CTG GTT GAG
3326 789
3327 Pro Leu Cys Arg Thr Tyr Ala Phe Lys Glu Gly Lys Tyr Leu Val Glu
3328 130 135 140 145
3329
3330 AAA GAA GTA GAA GGG ATA GGC TTG TGT CCA TAC AAT CCG GAA CAC AAC
3331 837
3332 Lys Glu Val Glu Gly Ile Gly Leu Cys Pro Tyr Asn Pro Glu His Asn
3333 150 155 160
3334
3335 AGC ACA TCT GTC TCC TAC AAT GGC CAA TTA TTT TCA GCG ACG GTC GCC
3336 885
3337 Ser Thr Ser Val Ser Tyr Asn Gly Gln Leu Phe Ser Ala Thr Val Ala
3338 165 170 175
3339
3340 GAC TTT TCC GGG GGC GAC CCT CTC ATA TAC AGG GAG CCC CAG CGC ACC
3341 933
3342 Asp Phe Ser Gly Gly Asp Pro Leu Ile Tyr Arg Glu Pro Gln Arg Thr
3343 180 185 190
3344
3345 GAA CTC TCA GAT CTC AAA CAA CTG AAC GCA CCG AAT TTC GTA AAC TCG
3346 981
3347 Glu Leu Ser Asp Leu Lys Gln Leu Asn Ala Pro Asn Phe Val Asn Ser
3348 195 200 205
3349
3350 GTG GCC TAT GGC GAC TAC ATA TTC TTC TAC CGT GAA ACC GCC GTC
3351 1029
3352 Val Ala Tyr Gly Asp Tyr Ile Phe Phe Phe Tyr Arg Glu Thr Ala Val
3353 210 215 220 225
3354
3355 GAG TAC ATG AAC TGC GGA AAA GTC ATC TAC TCG CGG GTC GCC AGG GTG
3356 1077
3357 Glu Tyr Met Asn Cys Gly Lys Val Ile Tyr Ser Arg Val Ala Arg Val
3358 230 235 240
3359
3360 TGC AAG GAC GAC AAA GGG GGC CCT CAC CAG TCA CGC GAC CGC TGG ACG
3361 1125
3362 Cys Lys Asp Asp Lys Gly Gly Pro His Gln Ser Arg Asp Arg Trp Thr
3363 245 250 255
3364
3365 TCG TTC CTC AAA GCA CGT CTC AAT TGT TCA ATT CCC GGC GAG TAC CCC
3366 1173

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713DATE: 12/17/93
TIME: 19:30:30

INPUT SET: S7086.raw

3367 Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Ile Pro Gly Glu Tyr Pro
3368 260 265 270
3369
3370 TTT TAC TTT GAT GAA ATC CAA TCA ACA AGT GAT ATA GTC GAG GGT CGG
3371 1221
3372 Phe Tyr Phe Asp Glu Ile Gln Ser Thr Ser Asp Ile Val Glu Gly Arg
3373 275 280 285
3374
3375 TAC AAT TCC GAC GAC AGC AAA AAG ATC ATT TAT GGA ATC CTC ACA ACT
3376 1269
3377 Tyr Asn Ser Asp Asp Ser Lys Lys Ile Ile Tyr Gly Ile Leu Thr Thr
3378 290 295 300 305
3379
3380 CCA GTT AAT GCC ATC GGC GGC TCG GCC ATT TGC GCG TAT CAA ATG GCC
3381 1317
3382 Pro Val Asn Ala Ile Gly Gly Ser Ala Ile Cys Ala Tyr Gln Met Ala
3383 310 315 320
3384
3385 GAC ATC TTG CGC GTG TTT GAA GGG AGC TTC AAG CAC CAA GAG ACG ATC
3386 1365
3387 Asp Ile Leu Arg Val Phe Glu Gly Ser Phe Lys His Gln Glu Thr Ile
3388 325 330 335
3389
3390 AAC TCG AAC TGG CTC CCC GTG CCC CAG AAC CTA GTC CCT GAA CCC AGG
3391 1413
3392 Asn Ser Asn Trp Leu Pro Val Pro Gln Asn Leu Val Pro Glu Pro Arg
3393 340 345 350
3394
3395 CCC GGG CAG TGC GTA CGC GAC AGC AGG ATC CTG CCC GAC AAG AAC GTC
3396 1461
3397 Pro Gly Gln Cys Val Arg Asp Ser Arg Ile Leu Pro Asp Lys Asn Val
3398 355 360 365
3399
3400 AAC TTT ATT AAG ACC CAC TCT TTG ATG GAG GAC GTT CCG GCT CTT TTC
3401 1509
3402 Asn Phe Ile Lys Thr His Ser Leu Met Glu Asp Val Pro Ala Leu Phe
3403 370 375 380 385
3404
3405 GGA AAA CCA GTT CTG GTC CGA GTG AGT CTG CAG TAT CGG TTT ACA GCC
3406 1557
3407 Gly Lys Pro Val Leu Val Arg Val Ser Leu Gln Tyr Arg Phe Thr Ala
3408 390 395 400
3409
3410 ATA ACA GTG GAT CCA CAA GTG AAA ACA ATC AAT AAT CAG TAT CTC GAT
3411 1605
3412 Ile Thr Val Asp Pro Gln Val Lys Thr Ile Asn Asn Gln Tyr Leu Asp
3413 405 410 415
3414
3415 GTT TTG TAT ATC GGA ACA GAT GAT GGG AAG GTA CTA AAA GCT GTT AAT
3416 1653
3417 Val Leu Tyr Ile Gly Thr Asp Asp Gly Lys Val Leu Lys Ala Val Asn

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:37**INPUT SET: S7086.raw**

3418	420	425	430
3419			
3420	ATA CCA AAG CGA CAC GCT AAA GCG TTG TTA TAT CGA AAA TAC CGT ACA		
3421	1701		
3422	Ile Pro Lys Arg His Ala Lys Ala Leu Leu Tyr Arg Lys Tyr Arg Thr		
3423	435	440	445
3424			
3425	TCC GTA CAT CCG CAC GGA GCT CCC GTA AAA CAG CTG AAG ATC GCT CCC		
3426	1749		
3427	Ser Val His Pro His Gly Ala Pro Val Lys Gln Leu Lys Ile Ala Pro		
3428	450	455	460
3429			465
3430	GGT TAT GGC AAA GTT GTG GTG GTC GGG AAA GAC GAA ATC AGA CTT GCT		
3431	1797		
3432	Gly Tyr Gly Lys Val Val Val Val Gly Lys Asp Glu Ile Arg Leu Ala		
3433	470	475	480
3434			
3435	AAT CTC AAC CAT TGT GCA AGC AAA ACG CGG TGC AAG GAC TGT GTG GAA		
3436	1845		
3437	Asn Leu Asn His Cys Ala Ser Lys Thr Arg Cys Lys Asp Cys Val Glu		
3438	485	490	495
3439			
3440	CTG CAA GAC CCA CAT TGC GCC TGG GAC GCC AAA CAA AAC CTG TGT GTC		
3441	1893		
3442	Leu Gln Asp Pro His Cys Ala Trp Asp Ala Lys Gln Asn Leu Cys Val		
3443	500	505	510
3444			
3445	AGC ATT GAC ACC GTC ACT TCG TAT CGC TTC CTG ATC CAG GAC GTA GTT		
3446	1941		
3447	Ser Ile Asp Thr Val Thr Ser Tyr Arg Phe Leu Ile Gln Asp Val Val		
3448	515	520	525
3449			
3450	CGC GGC GAC GAC AAC AAA TGT TGG TCG CCG CAA ACA GAC AAA AAG ACT		
3451	1989		
3452	Arg Gly Asp Asp Asn Lys Cys Trp Ser Pro Gln Thr Asp Lys Lys Thr		
3453	530	535	540
3454			545
3455	GTG ATT AAG AAT AAG CCC AGC GAG GTT GAG AAC GAG ATT ACG AAC TCC		
3456	2037		
3457	Val Ile Lys Asn Lys Pro Ser Glu Val Glu Asn Glu Ile Thr Asn Ser		
3458	550	555	560
3459			
3460	ATT GAC GAA AAG GAT CTC GAT TCA AGC GAT CCG CTC ATC AAA ACT GGT		
3461	2085		
3462	Ile Asp Glu Lys Asp Leu Asp Ser Ser Asp Pro Leu Ile Lys Thr Gly		
3463	565	570	575
3464			
3465	CTC GAT GAC GAT TCC GAT TGT GAT CCA GTC AGC GAG AAC AGC ATA GGC		
3466	2133		
3467	Leu Asp Asp Asp Ser Asp Cys Asp Pro Val Ser Glu Asn Ser Ile Gly		
3468	580	585	590

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:44**INPUT SET: S7086.raw**

3469
3470 GGA TGC GCC GTC CGC CAG CAA CTT GTT ATA TAC ACA GCT GGG ACT CTA
3471 2181
3472 Gly Cys Ala Val Arg Gln Gln Leu Val Ile Tyr Thr Ala Gly Thr Leu
3473 595 600 605
3474
3475 CAC ATT GTC GTG GTC GTC AGC ATC GTG GGT TTA TTT TCT TGG CTT
3476 2229
3477 His Ile Val Val Val Val Ser Ile Val Gly Leu Phe Ser Trp Leu
3478 610 615 620 625
3479
3480 TAT AGC GGG TTA TCT GTT TTC GCA AAA TTT CAC TCG GAT TCG CAA TAT
3481 2277
3482 Tyr Ser Gly Leu Ser Val Phe Ala Lys Phe His Ser Asp Ser Gln Tyr
3483 630 635 640
3484
3485 CCT GAG GCG CCG TTT ATA GAG CAG CAC AAT CAT TTG GAA AGA TTA AGC
3486 2325
3487 Pro Glu Ala Pro Phe Ile Glu Gln His Asn His Leu Glu Arg Leu Ser
3488 645 650 655
3489
3490 GCC AAC CAG ACG GGG TAT TTG ACT CCG AGG GCC AAT AAA GCG GTC AAT
3491 2373
3492 Ala Asn Gln Thr Gly Tyr Leu Thr Pro Arg Ala Asn Lys Ala Val Asn
3493 660 665 670
3494
3495 TTG GTG GTG AAG GTG TCT AGT AGC ACG CCG CGG CCG AAA AAG GAC AAT
3496 2421
3497 Leu Val Val Lys Val Ser Ser Ser Thr Pro Arg Pro Lys Lys Asp Asn
3498 675 680 685
3499
3500 CTC GAT GTC AGC AAA GAC TTG AAC ATT GCG AGT GAC GGG ACT TTG CAA
3501 2469
3502 Leu Asp Val Ser Lys Asp Leu Asn Ile Ala Ser Asp Gly Thr Leu Gln
3503 690 695 700 705
3504
3505 AAA ATC AAG AAG ACT TAC ATT TAGTGCGACT TTTT
3506 2504
3507 Lys Ile Lys Lys Thr Tyr Ile
3508 710
3509
3510
3511 (2) INFORMATION FOR SEQ ID NO:64:
3512
3513 (i) SEQUENCE CHARACTERISTICS:
3514 (A) LENGTH: 712 amino acids
3515 (B) TYPE: amino acid
3516 (D) TOPOLOGY: linear
3517
3518 (ii) MOLECULE TYPE: protein
3519

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:30:51

INPUT SET: S7086.raw

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

3520 Met Val Val Lys Ile Leu Val Trp Ser Ile Cys Leu Ile Ala Leu Cys
3521 1 5 10 15

3522 His Ala Trp Met Pro Asp Ser Ser Ser Lys Leu Ile Asn His Phe Lys
3523 20 25 30

3524

3525 Ser Val Glu Ser Lys Ser Phe Thr Gly Asn Ala Thr Phe Pro Asp His
3526 35 40 45

3527

3528 Phe Ile Val Leu Asn Gln Asp Glu Thr Ser Ile Leu Val Gly Gly Arg
3529 50 55 60

3530

3531 Asn Arg Val Tyr Asn Leu Ser Ile Phe Asp Leu Ser Glu Arg Lys Gly
3532 65 70 75 80

3533

3534 Gly Arg Ile Asp Trp Pro Ser Ser Asp Ala His Gly Gln Leu Cys Ile
3535 85 90 95

3536

3537 Leu Lys Gly Lys Thr Asp Asp Asp Cys Gln Asn Tyr Ile Arg Ile Leu
3538 100 105 110

3539

3540 Tyr Ser Ser Glu Pro Gly Lys Leu Val Ile Cys Gly Thr Asn Ser Tyr
3541 115 120 125

3542

3543 Lys Pro Leu Cys Arg Thr Tyr Ala Phe Lys Glu Gly Lys Tyr Leu Val
3544 130 135 140

3545

3546 Glu Lys Glu Val Glu Gly Ile Gly Leu Cys Pro Tyr Asn Pro Glu His
3547 145 150 155 160

3548

3549 Asn Ser Thr Ser Val Ser Tyr Asn Gly Gln Leu Phe Ser Ala Thr Val
3550 165 170 175

3551

3552 Ala Asp Phe Ser Gly Gly Asp Pro Leu Ile Tyr Arg Glu Pro Gln Arg
3553 180 185 190

3554

3555 Thr Glu Leu Ser Asp Leu Lys Gln Leu Asn Ala Pro Asn Phe Val Asn
3556 195 200 205

3557

3558 Ser Val Ala Tyr Gly Asp Tyr Ile Phe Phe Tyr Arg Glu Thr Ala
3559 210 215 220

3560

3561 Val Glu Tyr Met Asn Cys Gly Lys Val Ile Tyr Ser Arg Val Ala Arg
3562 225 230 235 240

3563

3564 Val Cys Lys Asp Asp Lys Gly Gly Pro His Gln Ser Arg Asp Arg Trp
3565 245 250 255

3566

3567 Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Ile Pro Gly Glu Tyr
3568 250 255

3569

3570

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:30:57**INPUT SET: S7086.raw**

3571	260	265	270
3572			
3573	Pro Phe Tyr Phe Asp Glu Ile Gln Ser Thr Ser Asp Ile Val Glu Gly		
3574	275	280	285
3575			
3576	Arg Tyr Asn Ser Asp Asp Ser Lys Lys Ile Ile Tyr Gly Ile Leu Thr		
3577	290	295	300
3578			
3579	Thr Pro Val Asn Ala Ile Gly Gly Ser Ala Ile Cys Ala Tyr Gln Met		
3580	305	310	315
3581			320
3582	Ala Asp Ile Leu Arg Val Phe Glu Gly Ser Phe Lys His Gln Glu Thr		
3583	325	330	335
3584			
3585	Ile Asn Ser Asn Trp Leu Pro Val Pro Gln Asn Leu Val Pro Glu Pro		
3586	340	345	350
3587			
3588	Arg Pro Gly Gln Cys Val Arg Asp Ser Arg Ile Leu Pro Asp Lys Asn		
3589	355	360	365
3590			
3591	Val Asn Phe Ile Lys Thr His Ser Leu Met Glu Asp Val Pro Ala Leu		
3592	370	375	380
3593			
3594	Phe Gly Lys Pro Val Leu Val Arg Val Ser Leu Gln Tyr Arg Phe Thr		
3595	385	390	395
3596			400
3597	Ala Ile Thr Val Asp Pro Gln Val Lys Thr Ile Asn Asn Gln Tyr Leu		
3598	405	410	415
3599			
3600	Asp Val Leu Tyr Ile Gly Thr Asp Asp Gly Lys Val Leu Lys Ala Val		
3601	420	425	430
3602			
3603	Asn Ile Pro Lys Arg His Ala Lys Ala Leu Leu Tyr Arg Lys Tyr Arg		
3604	435	440	445
3605			
3606	Thr Ser Val His Pro His Gly Ala Pro Val Lys Gln Leu Lys Ile Ala		
3607	450	455	460
3608			
3609	Pro Gly Tyr Gly Lys Val Val Val Val Gly Lys Asp Glu Ile Arg Leu		
3610	465	470	475
3611			480
3612	Ala Asn Leu Asn His Cys Ala Ser Lys Thr Arg Cys Lys Asp Cys Val		
3613	485	490	495
3614			
3615	Glu Leu Gln Asp Pro His Cys Ala Trp Asp Ala Lys Gln Asn Leu Cys		
3616	500	505	510
3617			
3618	Val Ser Ile Asp Thr Val Thr Ser Tyr Arg Phe Leu Ile Gln Asp Val		
3619	515	520	525
3620			
3621	Val Arg Gly Asp Asp Asn Lys Cys Trp Ser Pro Gln Thr Asp Lys Lys		

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:31:04

INPUT SET: S7086.raw

3622	530	535	540
3623			
3624	Thr Val Ile Lys Asn Lys Pro Ser Glu Val Glu Asn Glu Ile Thr Asn		
3625	545	550	555
3626			560
3627	Ser Ile Asp Glu Lys Asp Leu Asp Ser Ser Asp Pro Leu Ile Lys Thr		
3628		565	570
3629			575
3630	Gly Leu Asp Asp Asp Ser Asp Cys Asp Pro Val Ser Glu Asn Ser Ile		
3631		580	585
3632			590
3633	Gly Gly Cys Ala Val Arg Gln Gln Leu Val Ile Tyr Thr Ala Gly Thr		
3634		595	600
3635			605
3636	Leu His Ile Val Val Val Val Ser Ile Val Gly Leu Phe Ser Trp		
3637		610	615
3638			620
3639	Leu Tyr Ser Gly Leu Ser Val Phe Ala Lys Phe His Ser Asp Ser Gln		
3640		625	630
3641			635
3642	Tyr Pro Glu Ala Pro Phe Ile Glu Gln His Asn His Leu Glu Arg Leu		
3643		645	650
3644			655
3645	Ser Ala Asn Gln Thr Gly Tyr Leu Thr Pro Arg Ala Asn Lys Ala Val		
3646		660	665
3647			670
3648	Asn Leu Val Val Lys Val Ser Ser Ser Thr Pro Arg Pro Lys Lys Asp		
3649		675	680
3650			685
3651	Asn Leu Asp Val Ser Lys Asp Leu Asn Ile Ala Ser Asp Gly Thr Leu		
3652		690	695
3653			700
3654	Gln Lys Ile Lys Lys Thr Tyr Ile		
3655		705	710
3656			
3657			
3658	(2) INFORMATION FOR SEQ ID NO:65:		
3659			
3660	(i) SEQUENCE CHARACTERISTICS:		
3661	(A) LENGTH: 369 base pairs		
3662	(B) TYPE: nucleic acid		
3663	(C) STRANDEDNESS: double		
3664	(D) TOPOLOGY: linear		
3665			
3666	(ii) MOLECULE TYPE: cDNA		
3667			
3668			
3669	(ix) FEATURE:		
3670	(A) NAME/KEY: CDS		
3671	(B) LOCATION: 1..369		
3672			

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**DATE: 12/17/93
TIME: 19:31:11**INPUT SET: S7086.raw**

3673
3674 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:
3675
3676 ATG ATT TAT TTA TAC ACG GCG GAT AAC GTA ATT CCA AAA GAT GGT TTA
3677 48
3678 Met Ile Tyr Leu Tyr Thr Ala Asp Asn Val Ile Pro Lys Asp Gly Leu
3679 1 5 10 15
3680
3681 CAA GGA GCA TTT GTC GAT AAA GAC GGT ACT TAT GAC AAA GTT TAC ATT
3682 96
3683 Gln Gly Ala Phe Val Asp Lys Asp Gly Thr Tyr Asp Lys Val Tyr Ile
3684 20 25 30
3685
3686 CTT TTC ACT GTT ACT ATC GGC TCA AAG AGA ATT GTT AAA ATT CCG TAT
3687 144
3688 Leu Phe Thr Val Thr Ile Gly Ser Lys Arg Ile Val Lys Ile Pro Tyr
3689 35 40 45
3690
3691 ATA GCA CAA ATG TGC TTA AAC GAC GAA TGT GGT CCA TCA TCA TTG TCT
3692 192
3693 Ile Ala Gln Met Cys Leu Asn Asp Glu Cys Gly Pro Ser Ser Leu Ser
3694 50 55 60
3695
3696 AGT CAT AGA TGG TCG ACG TTG CTC AAA GTC GAA TTA GAA TGT GAC ATC
3697 240
3698 Ser His Arg Trp Ser Thr Leu Leu Lys Val Glu Leu Glu Cys Asp Ile
3699 65 70 75 80
3700
3701 GAC GGA AGA AGT TAT AGT CAA ATT AAT CAT TCT AAA ACT ATA AAA CAG
3702 288
3703 Asp Gly Arg Ser Tyr Ser Gln Ile Asn His Ser Lys Thr Ile Lys Gln
3704 85 90 95
3705
3706 ATA ATG ATA CGA TAC TAT ATG TAT TCT TTG ATA GTC CTT TTC CAA GTC
3707 336
3708 Ile Met Ile Arg Tyr Tyr Met Tyr Ser Leu Ile Val Leu Phe Gln Val
3709 100 105 110
3710
3711 CGC ATT ATG TAC CTA TTC TAT GAA TAC CAT TA
3712 369
3713 Arg Ile Met Tyr Leu Phe Tyr Glu Tyr His
3714 115 120
3715
3716
3717 (2) INFORMATION FOR SEQ ID NO:66:
3718
3719 (i) SEQUENCE CHARACTERISTICS:
3720 (A) LENGTH: 122 amino acids
3721 (B) TYPE: amino acid
3722 (D) TOPOLOGY: linear
3723

**RAW SEQUENCE LISTING
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:31:18

INPUT SET: S7086.raw

3724 (ii) MOLECULE TYPE: protein
3725
3726 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:
3727
3728 Met Ile Tyr Leu Tyr Thr Ala Asp Asn Val Ile Pro Lys Asp Gly Leu
3729 1 5 10 15
3730
3731 Gln Gly Ala Phe Val Asp Lys Asp Gly Thr Tyr Asp Lys Val Tyr Ile
3732 20 25 30
3733
3734 Leu Phe Thr Val Thr Ile Gly Ser Lys Arg Ile Val Lys Ile Pro Tyr
3735 35 40 45
3736
3737 Ile Ala Gln Met Cys Leu Asn Asp Glu Cys Gly Pro Ser Ser Leu Ser
3738 50 55 60
3739
3740 Ser His Arg Trp Ser Thr Leu Leu Lys Val Glu Leu Glu Cys Asp Ile
3741 65 70 75 80
3742
3743 Asp Gly Arg Ser Tyr Ser Gln Ile Asn His Ser Lys Thr Ile Lys Gln
3744 85 90 95
3745
3746 Ile Met Ile Arg Tyr Tyr Met Tyr Ser Leu Ile Val Leu Phe Gln Val
3747 100 105 110
3748
3749 Arg Ile Met Tyr Leu Phe Tyr Glu Tyr His
3750 115 120
3751
3752

PAGE: 1

**SEQUENCE VERIFICATION REPORT
PATENT APPLICATION US/08/121,713**

DATE: 12/17/93
TIME: 19:31:22

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Line	Error	Original Text
13	Number of Sequences (50) Doesn't Equal Actual Count (66)	(iii) NUMBER OF SEQUENCES: 50
1262	Entered (2601) and Calc. Seq. Length (0) differ	(A) LENGTH: 2601 base pairs
1700	Entered (1332) and Calc. Seq. Length (0) differ	(A) LENGTH: 1332 base pairs
1955	Entered (2854) and Calc. Seq. Length (0) differ	(A) LENGTH: 2854 base pairs
2388	Entered (3560) and Calc. Seq. Length (0) differ	(A) LENGTH: 3560 base pairs
2828	Entered (2670) and Calc. Seq. Length (0) differ	(A) LENGTH: 2670 base pairs
3250	Entered (2504) and Calc. Seq. Length (0) differ	(A) LENGTH: 2504 base pairs
3661	Entered (369) and Calc. Seq. Length (0) differ	(A) LENGTH: 369 base pairs

PAGE: 1

SEQUENCE MISSING ITEM REPORT
PATENT APPLICATION **US/08/121,713**

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TIME: 19:31:24

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APPLICATION NUMBER
FILING DATE
PRIOR APPLICATION DATA

PAGE: 1

SEQUENCE CORRECTION REPORT
PATENT APPLICATION **US/08/121,713**

DATE: 12/17/93
TIME: 19:31:24

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Line	Original Text	Corrected Text
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